QSR – TEMPLATE version 1.1

**RFID PLAYBOOK**

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Logo

Description automatically generated

Company Logo

# General Overview

## What industry standards to follow?

XXX is following all industry standards set forth by GS1 EPC Tag Data Standard, GS1 Tag Placement Guidelines, and Auburn University ARC inlay specifications. All tagging requirements must meet these standards and guidelines prior to arriving in our stores.

## In Scope:

|  |  |  |
| --- | --- | --- |
| **Division** | **Categories** | **Receipt Date** |
| Corrugate – No Handles, closed on all sides | FSMA Categories | TBD |
| Corrugate – No Handles, closed on all sides | Non-FSMA Categories | TBD |
| Reusable Plastic Tray | FSMA Categories | TBD |
| Reusable Plastic Tray | Non-FSMA Categories | TBD |
| Alternative Corrugate Styles (e.g. open top or holes/openings in case) | FSMA Categories | TBD |
| Alternative Corrugate Styles (e.g. open top or holes/openings in case) | Non-FSMA Categories | TBD |
| Shrink Wrapped Items | FSMA Categories | TBD |
| Shrink Wrapped Items | Non-FSMA Categories | TBD |
| Products Wrapped in Paper | FSMA Categories | TBD |
| Products Wrapped in Paper | Non-FSMA Categories | TBD |
| Inner Pack for Split Cases | FSMA Categories | TBD |
| Inner Pack for Split Cases | Non-FSMA Categories | TBD |

## Out of Scope:

* Defined by company.

# 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.
* Engage with an approved Inlay Manufacturer and determine if you will also need to engage with your RFID Service Bureau (e.g., Corrugate, RPC, Trays, etc.)
* Begin procurement discussions
* Begin data management/serialization discussions
* Develop quality check process

# Determine Inlay Manufacturer

Suppliers may only select from the approved list provided on the Auburn University 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 XXX. Even if using an approved inlay provider, you must still submit the final production samples to the Auburn University RFID Lab for approval.

# Determine Packaging Resource, RFID Service Bureau

Suppliers can choose to go to a solution provider or service bureau that adheres to the GS1 standards and ARC standards and obtain approvals from the Auburn University RFID Lab. Alternatively, suppliers can print and encode their own RFID tags. In this case, they must also adhere to the GS1 standards and ARC standards and obtain approvals from the Auburn University RFID Lab.

A list of RFID packaging resources is available at <https://rfidpackagingresources.org/>.  This is NOT an endorsement.  These are packaging providers that have supplied packaging for other RFID Programs and could help with your RFID packaging needs as well.

Suppliers and brand owners can also utilize other RFID solution providers that are not listed. All solution providers will need to source an Auburn University ARC approved inlay.

# Select RFID Inlay Spec

XXX has 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 category. **You can only use an approved inlay from an item’s associated inlay list.**

The latest version of the list is available at XXX

|  |  |  |  |
| --- | --- | --- | --- |
| **Department** | **Category** | **Inlay Spec** | **Approved Inlay List** |
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# Companies that can provide RFID Lab ARC approved RFID Inlays

The latest version of the ARC approved RFID inlay manufacturer contact information is available at <https://rfid.auburn.edu/inlaycontacts/>

|  |  |
| --- | --- |
| **Company** | **Contact Information** |
| Avery Dennison Smartrac | [avery.dennison.rbis.rfid@averydennison.com](mailto:avery.dennison.rbis.rfid@averydennison.com)  [rfidinlays@averydennison.com](mailto:rfidinlays@averydennison.com) |
| Checkpoint | [rfidinfo@checkpt.com](mailto:rfidinfo@checkpt.com) |
| Hana RFID | [info@hanarfid.com](mailto:info@hanarfid.com) |
| Paragon ID | [retailRFID@paragon-id.com](mailto:retailRFID@paragon-id.com) |
| SML | [smlrfid@sml.com](mailto:smlrfid@sml.com) |
| Tageos | [Contact@tageos.com](mailto:Contact@tageos.com) |
| Arizon | [Business@Arizonrfid.com](mailto:Business@Arizonrfid.com) |
| Beontag | [arc@beontag.com](mailto:arc@beontag.com) |

# Identify Inlay Size

Based on the inlay spec, use the largest inlay size available that fits your packaging. If your packaging doesn’t 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. This is more of a recommendation.

# Determine placement of RFID tag

Please consult section 5 of the GS1 US RFID Foodservice Implementation Guideline for details regarding tag placement. https://www.gs1us.org/content/dam/gs1us/documents/industries-insights/by-industry/food/standards-in-action/GS1%20US%20RFID%20Foodservice%20Implementation%20Guideline%20R1.0%20June%2029%202023.pdf

# Tagging Requirements

* 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.
* No RFID inlay placement on bottom of polybags, bottom of boxed items, on glass, on liquids, or near metal/foil.
* RFID cannot be applied to an EAS tag.
* RFID tag can be integrated or placed inside the packaging (not the product) as long as the EPC symbol is placed outside.
* Please make sure that that there is only ONE RFID tag per product.
* As a general guideline, use a 4 mm 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 the RFID Lab approval prior to bulk production of the printed packaging.
* Close proximity of RFID tags should be considered in stacking when determining tag formats and placement. RFID tags cannot be in very close proximity of each other when displayed/stored.

# EPC Symbol

* A black and white logo

  Description automatically generated with low confidenceThe 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 store 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 store 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 Shipper Case Markings

* In order for the stores and DCs to easily identify on cases which items have packaging with RFID labels, we are updating the Shipper Case Markings to include the EPC Symbol.
* Case marking are required to be printed directly on the corrugated shipper; labels can be used at Suppliers discretion.
* 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.

# 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 DSGTIN+ tag encoding standard maintained by GS1 is to be used for case/carton tagging of food and consumer-facing food packaging. See the GS1 US RFID Foodservice Implementation Guideline for details regarding encoding and serialization.

<https://www.gs1us.org/content/dam/gs1us/documents/industries-insights/by-industry/food/standards-in-action/GS1%20US%20RFID%20Foodservice%20Implementation%20Guideline%20R1.0%20June%2029%202023.pdf>

* 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 properly throughout the development process. 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/content/dam/gs1us/documents/industries-insights/by-industry/apparel-general-merchandise/guideline-toolkit/Developing-an-RFID-Serialization-Plan.pdf>
* Tags must be permalocked to prevent tampering.
* All tags must undergo quality and data integrity checks prior to entering the supply chain.

## UPC to EPC Conversion

* The EPC data structure is an industry standard and is maintained by GS1. For information regarding the EPC data structure, please visit the GS1 website. A helpful video series may be found here: <https://www.youtube.com/playlist?list=PLcVbFojm8MJQM3TNiA5AOUFcy4g6UM6a3>
* The EPC Encoder/Decoder Tool may be found here: <https://www.gs1.org/services/epc-encoderdecoder>

# 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 stores will be the responsibility of product suppliers and all costs incurred.

# ALEC - Approval of Production RFID Packaging Samples

**RFID Lab approval is mandatory before any shipment of goods can begin from any agency you receive packaging from.**

Send Five (5) EPC tag samples only (no product or packaging) to the RFID Lab for ALEC validation 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
  + Brand
  + Packaging type
  + Packaging agency
  + RFID Inlay model
  + Tagging location.

Send 5 inlay samples of the one representative UPC.

* RFID Tags MUST be production quality.
* Please complete and submit the online submission form at XXX Print the PDF confirmation and include it along with the samples.
* The RFID Lab’s shipping information is available in the online submission form.
* Testing will not begin until the printed confirmation form has arrived at the lab.
* Actual product or packaging 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.

# Contacts

## XXX Corporate

General questions XXX

Website XXX

## Vendor relations

General questions XXX

Website XXX

## Auburn University RFID Lab

General Questions XXX

ALEC RFID tag samples validation submission form XXX

Lab tours and business case XXX

ARC Website <https://rfidlab.org/arc/>

## GS1 US

Website: <https://www.gs1us.org/supply-chain/rfid>

Implementation Guideline and Executive Overview:

<https://www.gs1us.org/industries-and-insights/by-industry/foodservice/implementation-resources-for-standards/encoding-attribute-data-in-epc-rfid>

Supplier-oriented video series, orientation to RFID and source tagging: <https://www.youtube.com/playlist?list=PLcVbFojm8MJQM3TNiA5AOUFcy4g6UM6a3>

Serialization Guide <https://www.gs1us.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=1946&_ga=2.42001189.1061360610.1644419937-546077369.1568401519&language=en-US&PortalId=0&TabId=134>

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