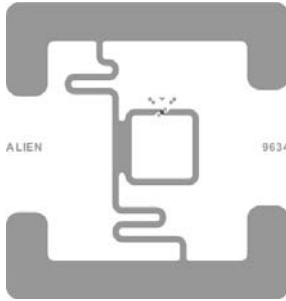




# ALN-9634 2x2 INLAY

The Alien Technology® ALN-9634 “2x2” is a general-purpose RFID inlay, designed for use in baggage tags and larger items, including apparel and pharmaceutical bottles



## Applications

- Apparel hang tags
- Larger pharmaceuticals
- Baggage

FEATURE	DESCRIPTION	BENEFIT
Large form-factor tag	A large square form-factor tag	Performance optimized for tracking larger items
Multiple frequency optimized sensitivity	Optimized for high performance in all world regions	A worldwide performance tag

## Features:

- › Suitable for larger item-level applications
- › EPC Gen 2 (v1.2.0) compliant
- › ISO/IEC 18000-6C compliant
- › Worldwide RFID UHF operation (840-960MHz)
- › Higgs™-3 IC with 800-bits of Nonvolatile Memory
  - 32-bit TID
  - 64-bit Unique TID
  - 96-bit EPC Memory, extensible to 480-bits
  - 512-bit User Memory
  - 32-bit Access password
  - 32-bit Kill password
- › Pre-programmed with a unique, unalterable 64-bit serial number (ideal for authentication)
- › User Memory can be Block Perma-Locked
- › User Memory can be Read Password protected in 64-bit blocks, prohibiting unintended Reads without an access password
- › Supports all Mandatory and Optional Gen 2 commands including item level commands
- › Custom commands for high speed programming
- › Available in high-yield, high-capacity dry/wet inlay rolls for high volume converting processes

## Product Overview:

Powered by Alien®’s break-through **Higgs™3 UHF RFID IC** and **innovative 2x2 antenna design**, the ALN-9634 delivers industry leading EPC Gen 2 performance and reliability in a 2” x 2” form factor.

ALN-9634 inlays are *World Tag* compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.

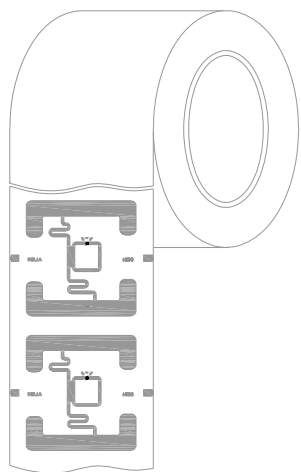
With its Higgs-3 core, the “2x2” delivers exceptional performance and is especially well-suited for larger item level applications where geometries are limited, but where high performance is required.

The “2x2” inlay comprises a rich feature set including a 32-bit TID, a **64-bit Unique TID for authentication and serialization applications**, an **extensible EPC memory bank, 512-bits of user memory** for distributed data applications, and **password protected read and write** support capabilities to prevent unauthorized viewing and modification of the tag’s data.

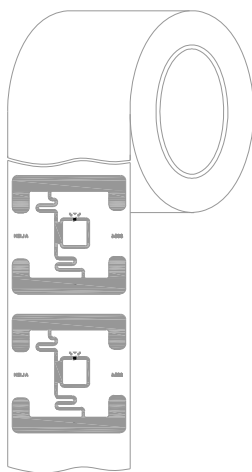


# ALN 9634 2x2 Inlay

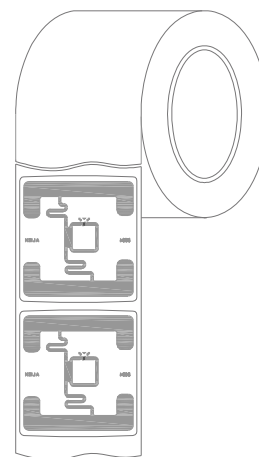
## ALN-9634 Inlay Orientation



**ALN-9634-FR**  
(Dry Unslit Roll)



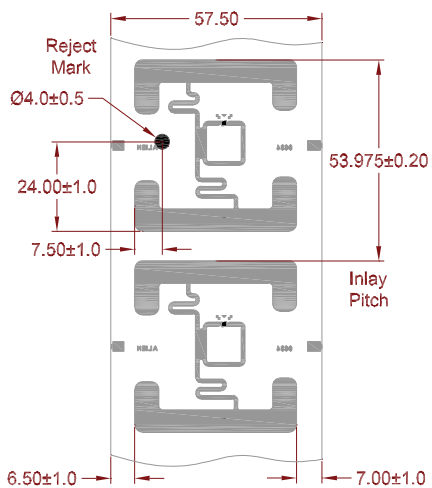
**ALN-9634-FSR**  
(Dry Slit Roll)



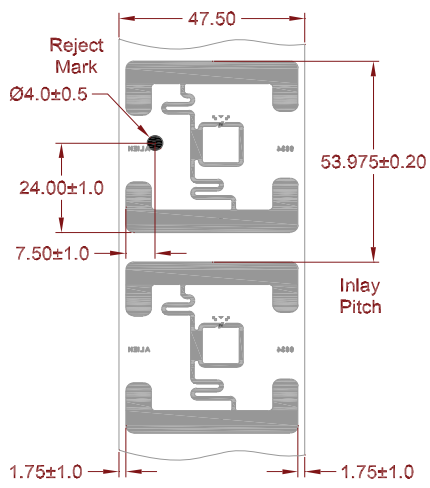
**ALN-9634-FWRW**  
(White Wet Roll)

Standard Alien Inlay rolls unwind with metal antenna side facing outward, with respect to the core.

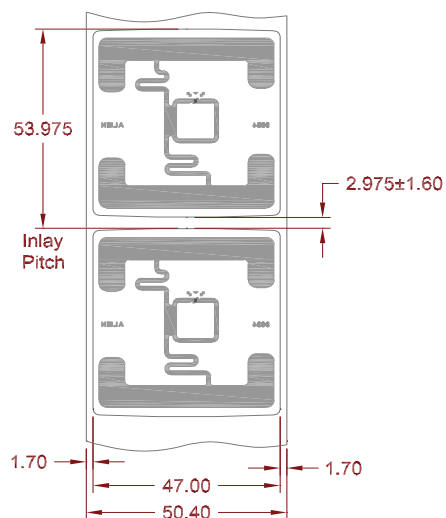
## ALN-9634 Inlay Specification



**ALN-9634-FR**  
(Dry Unslit Roll)



**ALN-9634-FSR**  
(Dry Slit Roll)

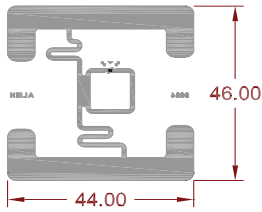


**ALN-9634-FWRW**  
(White Wet Roll)

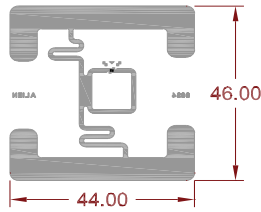


# ALN 9634 2x2 Inlay

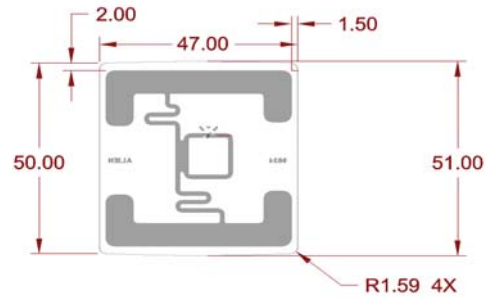
## ALN-9634 Inlay General Dimensions



**ALN-9634-FR**  
(Dry Unslit Inlay)



**ALN-9634-FSR**  
(Dry Slit Inlay)



**ALN-9634-FWRW**  
(White Wet Inlay)

## ALN-9634 Inlay Stackup

DRY INLAY THICKNESS, $\pm 10\%$	
OVER ANTENNA	0.05 mm
OVER CHIP	0.25 mm



**ALN-9634-FR**  
(Dry Unslit Inlay)

DRY INLAY THICKNESS, $\pm 10\%$	
OVER ANTENNA	0.05 mm
OVER CHIP	0.25 mm



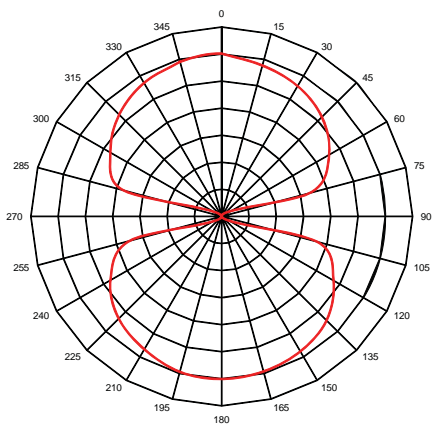
**ALN-9634-FSR**  
(Dry Slit Inlay)

WHITE WET INLAY THICKNESS, $\pm 10\%$	
OVER ANTENNA	0.16 mm
OVER CHIP	0.36 mm

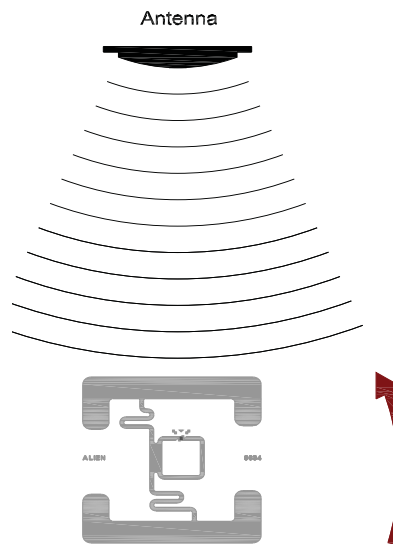


**ALN-9634-FWRW**  
(White Wet Inlay)

## ALN-9627 Inlay Angular Sensitivity



Angular Sensitivity  
(Relative Read Range vs. Orientation)



Angular Sensitivity  
Inlay is rotated in the x, y, plane about the z axis  
(tag shown at 0° with respect to face of antenna)



## ALN 9634 2x2 Inlay

### ALN-9634 Specifications

#### Dry Inlay

Antenna Width	1.73" [44.0mm]
Antenna Length	1.81" [46.0mm]
Web Width (-FR)	2.26" [57.5mm]
Web Width (-FSR)	1.87" [47.5mm]
Web Pitch	2.125" [53.975mm]
Core Width (-FR)	2.26" [57.5mm]
Core Width (-FSR)	1.87" [47.5mm]
Core ID	6.0" [152.4mm]*
Core Material	Fiberboard
Inlays per Roll	7,500 Nominal
Maximum Roll OD	< 16.0" [406.4mm]
Roll Labeling Data	Roll #, Quantity

#### Wet Inlay

Inlay Width	1.85" [47.0mm]
Inlay Length	2.01" [51.0mm]
Web Width	1.98" [50.4mm]
Web Pitch	2.125" [53.975mm]
Core Width	1.98" [50.4mm]
Core ID	6" [152.4mm]*
Core Material	Fiberboard
Inlays per Roll	7,500 Nominal
Maximum Roll OD	< 16.0" [406.4mm]
Roll Labeling Data	Roll #, Quantity
White	TT Printable White Film Only
Overlay Adhesive	General Purpose Permanent
Inlay Adhesive	General Purpose Permanent
Adhesive Application Temperature	> +25°F [-4°C]
Adhesive Service Temperature	-40°F to +200°F [-40°C to +93.3°C]
Release Liner	40# SCK

\* Shipped with 6" to 3" plastic core adapter

#### Environmental

Shelf Life	2 years at +77°F [+25°C] @ 40%RH
Recommended Storage	+77°F [+25°C] @ 40% RH
Storage Limits	-13°F to 122°F [-25°C to +50°C] 20% to 90% RH Non-condensing
Operating Limits	-40°F to +158°F [-40°C to +70°C] 20% to 90% RH Non-condensing
Bend Diameter	> 1.97" [50mm]
Pressure	< 5N/mm <sup>2</sup>
Drop Resistance	Per ASTM D5276
Write Cycles	100,000 @ 25°C
RoHs	2002/95/EC, 2005/618/EC, 2011/65/EU Compliant
REACH	1907/2006/EC Compliant (SVHC and ECHA)
ESD Limit- HBM / CDM	5.0kV / 1.5kV

#### RFID

Protocols Supported	EPCglobal Class 1 Gen 2 ISO/IEC 18000-6C
Integrated Circuit	Alien Higgs-3
EPCglobal Certificate	950110126000001084
Operating Frequency	840-960 MHz
EPC Size	96 - 480 Bits
User Memory	512 Bits
TID	32 Bits
Unique TID	64 Bits
Access Password	32 Bits
Kill Password	32 Bits

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HANDLING PRECAUTIONS Observe standard handling practices to minimize ESD.

DISCLAIMER Application recommendations are guidelines only - actual results may vary and should be confirmed. This is a general purpose product not designed or intended for any specific application.

This product is covered by one or more of the following U.S. patents: 7967204, 7931063, 7869766, 7737825, 7716208, 7716160, 7688206, 7659822, 7619531, 7615479, 7598867, 7580378, 7576656, 7562083, 7561221, 7559486, 7559131, 7554451, 7551141, 7442301, 7352008, 7331218, 7322055, 7300610, 7489248, 7453705, 7425467, 7417306, 7411503, 7385284, 7377445, 7364084, 7353598, 7342490, 7324061, 7321159, 7301458, 7295114, 7288432, 7265675, 7262686, 7260882, 7253735, 7244326, 7218527, 7214569, 7199527, 7193504, 7173528, 7172910, 7172789, 7141176, 7113250, 7101502, 7080444, 7070851, 7068224, 7046328, 6998644, 6988667, 6985361, 6980184, 6970219, 6952157, 6942155, 6933848, 6927085, 6816380, 6780696, 6731353, 6693384, 6683663, 6665044, 6657289, 6623579, 6606247, 6606079, 6590346, 6586338, 6566744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

27 June 2013