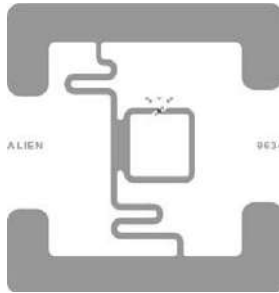




ALN-9634 2x2 Inlay

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.

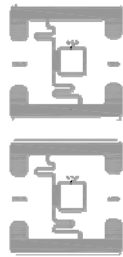


ALN 9634 2x2 Inlay

ALN-9634 Inlay Orientation



ALN-9634-FR
(Dry Unslit Roll)



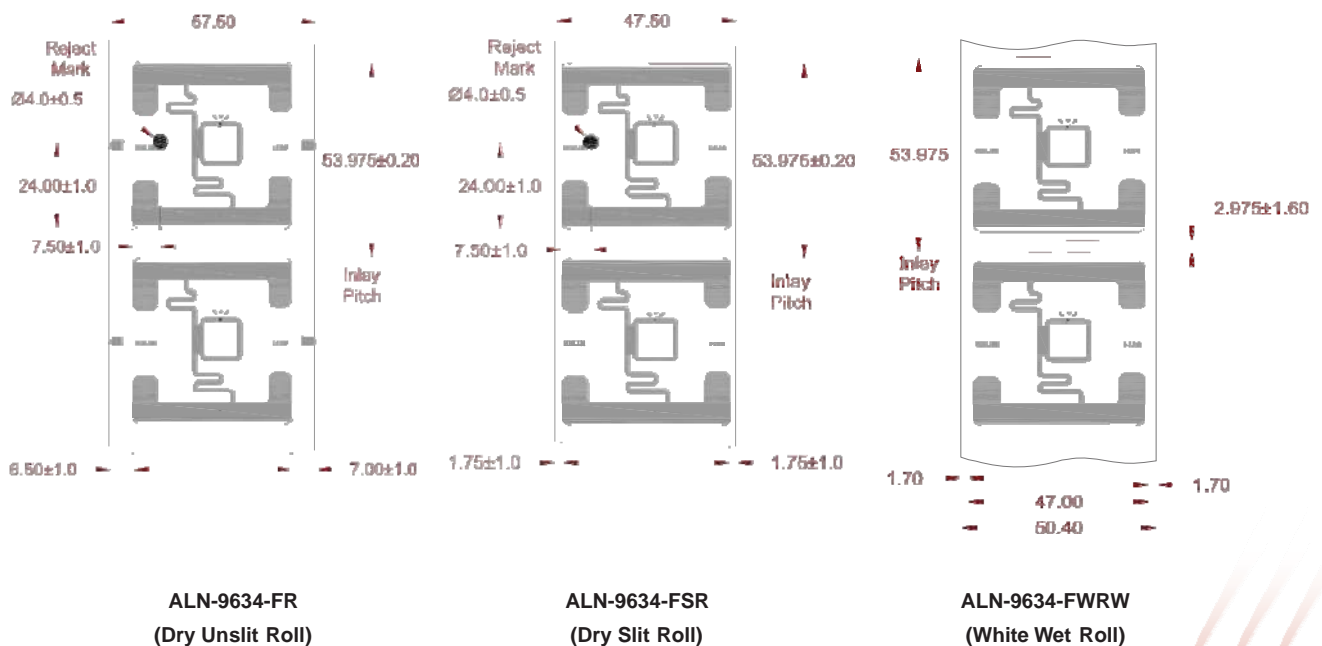
ALN-9634-FSR
(Dry Slit Roll)



ALN-9634-FWRW
(White Wet Roll)

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

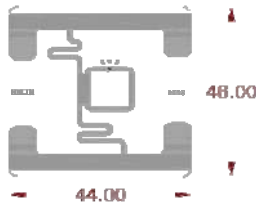
ALN-9634 Inlay Specification



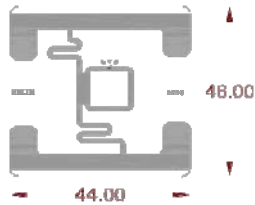


ALN 9634 2x2 Inlay

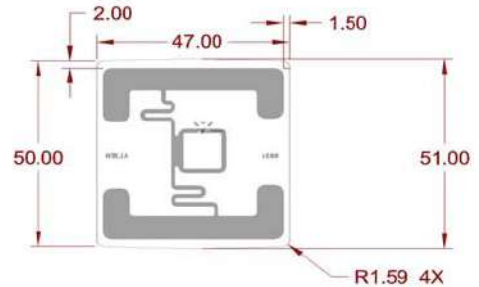
ALN-9634 Inlay General Dimensions



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 |



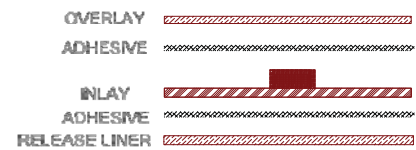
ALN-9634-FR
(Dry Unslit Inlay)

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



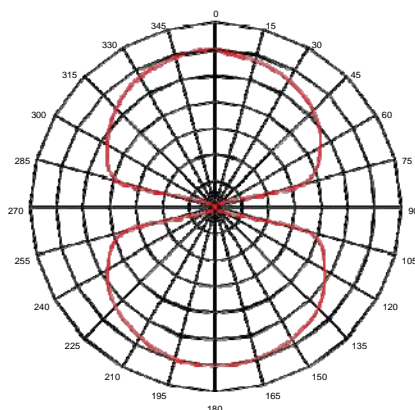
ALN-9634-FSR
(Dry Slit Inlay)

| WHITE WET INLAY THICKNESS, $\pm 10\%$ | |
|---------------------------------------|---------|
| OVER ANTENNA | 0.18 mm |
| OVER CHIP | 0.36 mm |

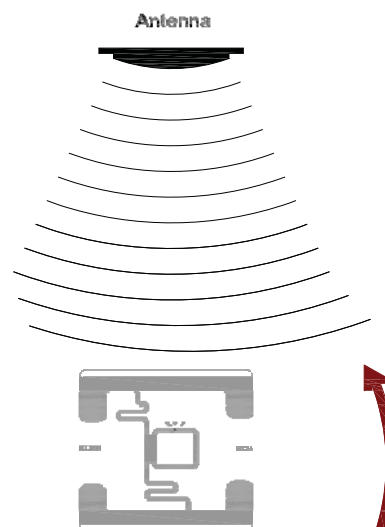


ALN-9634-FWRW
(White Wet Inlay)

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 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 ² |
| 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, 7868766, 7737825, 7716208, 7716160, 7688206, 7659822, 7619531, 7615479, 7598867, 7580378, 7576656, 7562083, 7561221, 7559486, 7559131, 7554451, 7551141, 7542301, 7542008, 7531218, 7522055, 7500610, 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, 7172789, 7141176, 7113250, 7080444, 7070851, 7068224, 7046328, 6998644, 6988667, 6985361, 6980184, 6970219, 6952157, 6942155, 6933848, 6927085, 6816380, 6780696, 6731353, 6693384, 6685663, 6665044, 6657289, 6623579, 6606247, 6606079, 6590346, 6586338, 6566744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

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