



The Alien Technology<sup>®</sup> ALN-9630 Squiglette RFID inlay is a narrower version of its high-performance, general-purpose Squiggle<sup>®</sup> sibling.



## Applications

- Apparel hang tags
- Corrugate cases
- Pallet placard labels
- Shipping labels
- Asset management
- File folder labels
- Application on plastics

FEATURE	DESCRIPTION	BENEFIT
Squiggle tag performance in a smaller tag	Approaches the well regarded Squiggle performance tag in a smaller form-factor	Smaller form-factor, still robust, proven, and reliable
Multiple frequency optimized sensitivity	Optimized for high performance in all world regions	A worldwide performance tag

## Features:

Designed to meet EPCglobal Gen2 (V1.2.0) and ISO/IEC 18000-6C

- › 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:

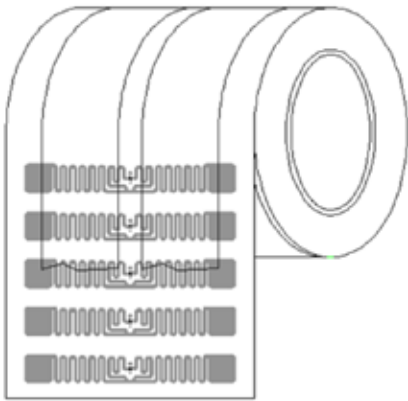
Powered by Alien's break-through **Higgs 3 UHF RFID IC** and innovative **Squiglette** antenna design, the ALN-9630 delivers industry leading EPC Gen 2 performance and reliability in a narrower width than its bigger brother, the Squiggle<sup>®</sup>, and makes it ideal for apparel applications.

ALN-9630 inlays are *World Tag* compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.

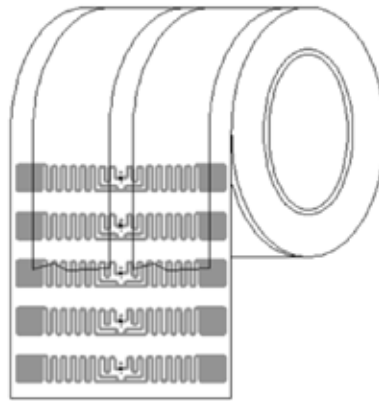
With its Higgs-3 core, the Squiglette delivers excellent performance and a rich feature set expanding the standard 32-bit TID with an **additional 64-bit Unique TID for authentication and serialization** applications, an **extensible EPC memory bank, 512-bits of user memory** for distributed data applications, and **password protected read and write** support capabilities to prevent unauthorized viewing and modification of the tags data.



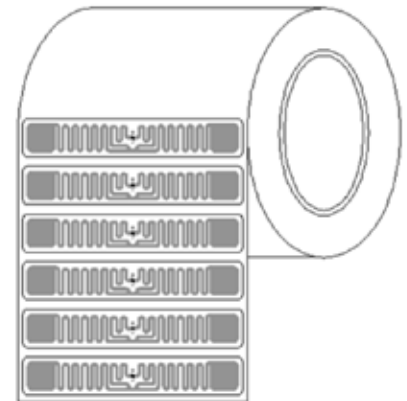
## ALN-9630 Inlay Orientation



**ALN-9630-FR**  
(Dry Unslit Roll)



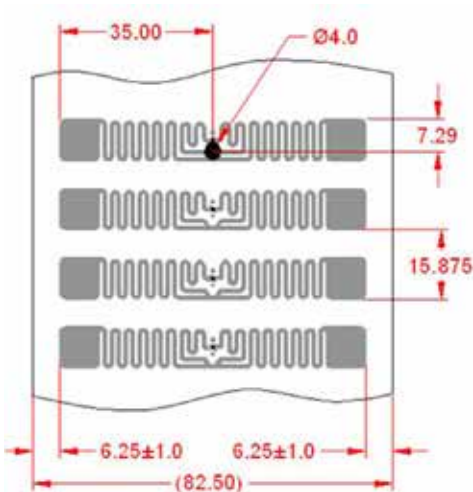
**ALN-9630-FSR**  
(Dry Slit Roll)



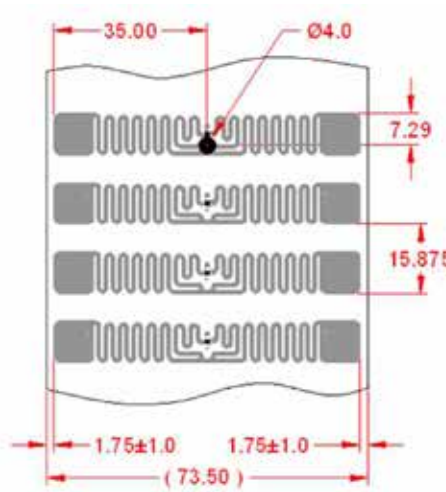
**ALN-9630-FWRC / -FWRW**  
(Clear / White Wet Roll)

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

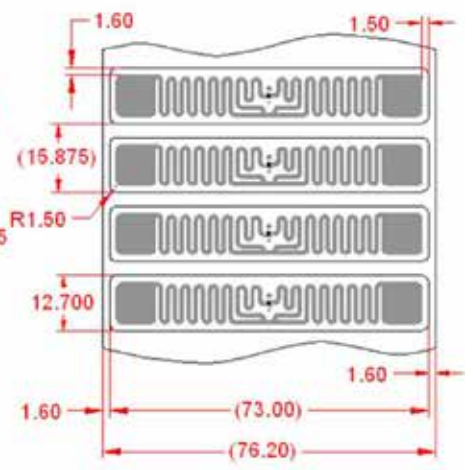
## ALN-9630 Inlay Specification



**ALN-9630-FR**  
(Dry Unslit Roll)



**ALN-9630-FSR**  
(Dry Slit Roll)



**ALN-9630-FWRC / -FWRW**  
(Clear / White Wet Inlay)

## ALN-9630 Inlay Stackup

## ALN 9630 Squiglette Inlay

DRY INLAY THICKNESS, ±10%	
OVER ANTENNA	0.05 mm
OVER CHIP	0.25 mm

CLEAR WET INLAY THICKNESS, ±10%	
OVER ANTENNA	0.08 mm
OVER CHIP	0.28 mm

WHITE WET INLAY THICKNESS, ±10%	
OVER ANTENNA	0.16 mm
OVER CHIP	0.36 mm

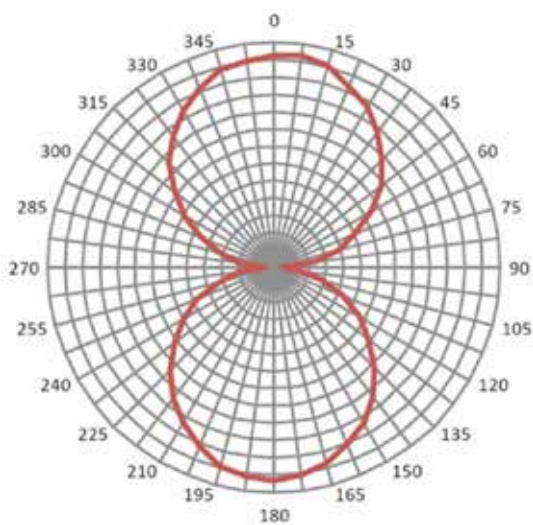


**ALN-9630-FR / -FSR**  
(Dry Unslit / Slit Inlay)

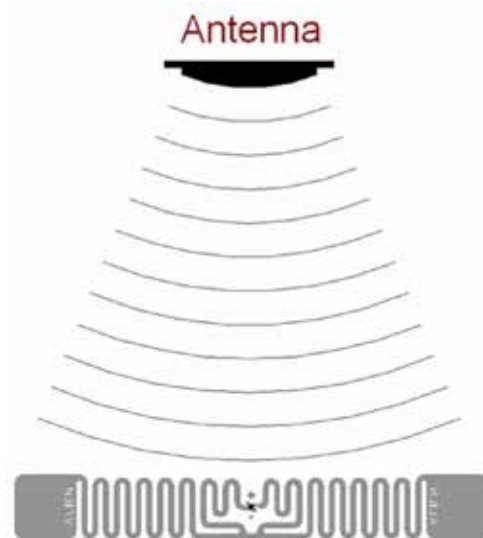
**ALN-9630-FWRC**  
(Clear Wet Inlay)

**ALN-9630-FWRW**  
(White Wet Inlay)

## ALN-9630 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-9630 Squiglette Inlay



**ALIEN ALN 9630 Squiglette Inlay**

## ALN-9630 Specifications

### Dry Inlay

Antenna Width	2.756 [70mm]
Antenna Length	0.374 [9.5mm]
Web Width (-FR)	3.25 [82.5mm]
Web Width (-FSR)	2.89 [73.5mm]
Web Pitch	0.625 [15.875mm]
Core Width (-FR)	3.25 [82.5mm]
Core Width (-FSR)	2.89 [73.5mm]
Core ID	6 [152.4mm]*
Core Material	Fiberboard
Interleaf Material	Paper
Interleaf Width	1.0 [25.4mm]
Inlays per Roll	20,000 Nominal
Maximum Roll OD	< 12 [304.8mm]
Roll Labeling Data	Roll #, Quantity

### Wet Inlay

Inlay Width	2.87 [73mm]
Inlay Length	0.5 [12.7mm]
Web Width	3.0 [76.2mm]
Web Pitch	0.625 [15.875mm]
Core Width	3.0 [76.2mm]
Core ID	6 [152.4mm]*
Core Material	Fiberboard
Inlays per Roll	20,000 Nominal
Maximum Roll OD	< 16 [406.4mm]
Roll Labeling Data	Roll #, Quantity
Clear (-FWRC)	PET base without Overlay
White (-FWRW)	TT Printable White Film Only
Overlay Adhesive (-FWRW)	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

### 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	ISO/IEC 18000-6C EPCglobal Class 1 Gen 2
Integrated Circuit	Alien Higgs-3
EPCglobal Certificate	950110126000001084
Operating Frequency	840960 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

\* Shipped with 6 to 3 plastic core adapter

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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, 7968766, 7737825, 7716208, 7716160, 7686206, 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, 7353588, 7342490, 7324061, 7321159, 7301458, 7295114, 7286432, 7265075, 7262886, 7260082, 7253735, 7244326, 7218527, 7214569, 7198527, 7193504, 7173528, 7172789, 7141176, 7113250, 7101502, 7080444, 7070851, 7068224, 7046328, 6998644, 6988667, 6985361, 6980184, 6970219, 6952157, 6942155, 6933848, 6927085, 6916380, 6786696, 6731353, 6693384, 6683663, 6665044, 6657269, 6623579, 6606247, 6606079, 6590346, 6586338, 6566744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

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