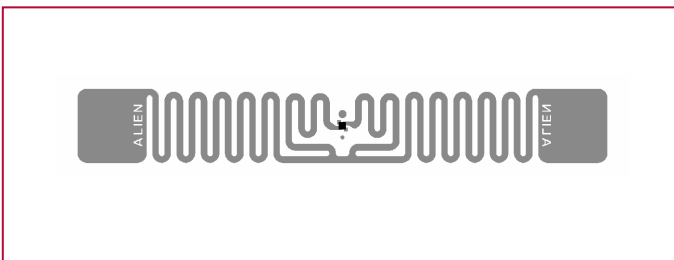




## ALN-9630 Squiglette Inlay

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



Powered by Alien<sup>®</sup>'s break-through Higgs<sup>™</sup>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 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.

Typical applications for the Squiglette include, but are not limited to: apparel, hang tags, corrugate cases, pallet placard labels, shipping labels, asset management, file folder labels, and application on plastics.

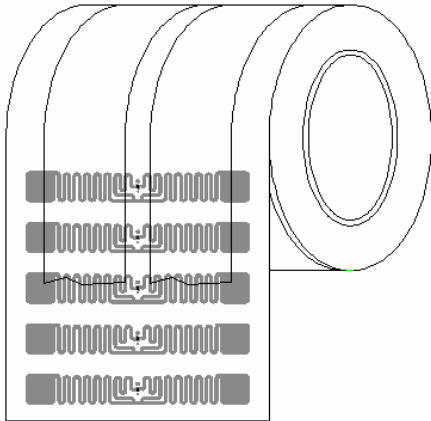
### FEATURES

- › Exceptional performance
- › EPC Gen 2 (v1.2.0) compliant
- › ISO/IEC 18000-6C compliant
- › Worldwide RFID UHF operation (840-960MHz)
- › Higgs<sup>™</sup>-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

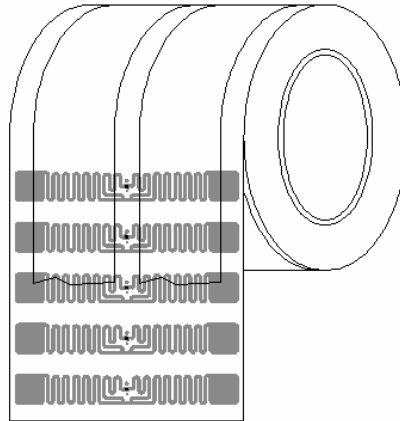


# ALN-9630 “Squiglette” Inlay

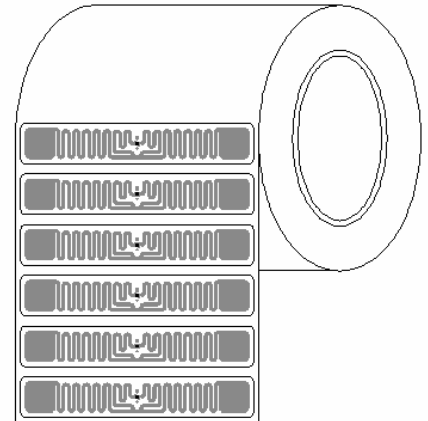
## ALN-9630 Inlay Orientation



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



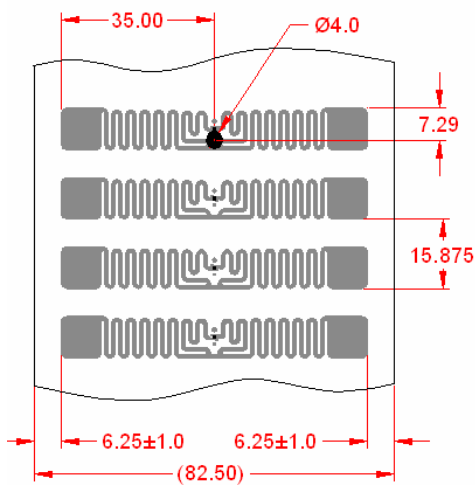
**ALN-9630-FSR**  
(Dry Slit Roll)



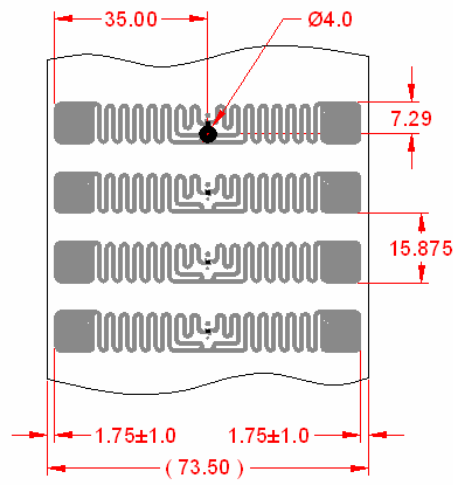
**ALN-9630-FWRC /-FWRW**  
(Clear / White Wet Roll)

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

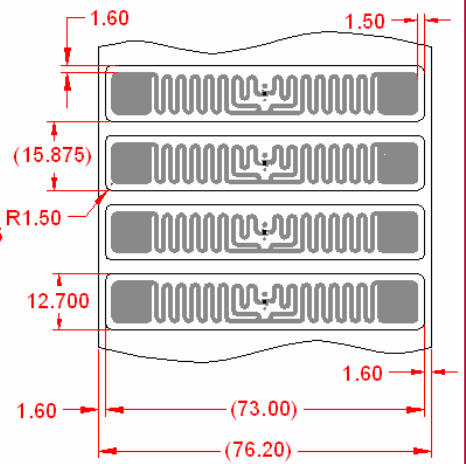
## ALN-9630 Inlay Specification



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



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



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



# ALN-9630 "Squiglette" Inlay

## ALN-9630 Inlay Stackup

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

CLEAR WET INLAY THICKNESS, $\pm 10\%$	
OVER ANTENNA	0.08 mm
OVER CHIP	0.28 mm

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



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

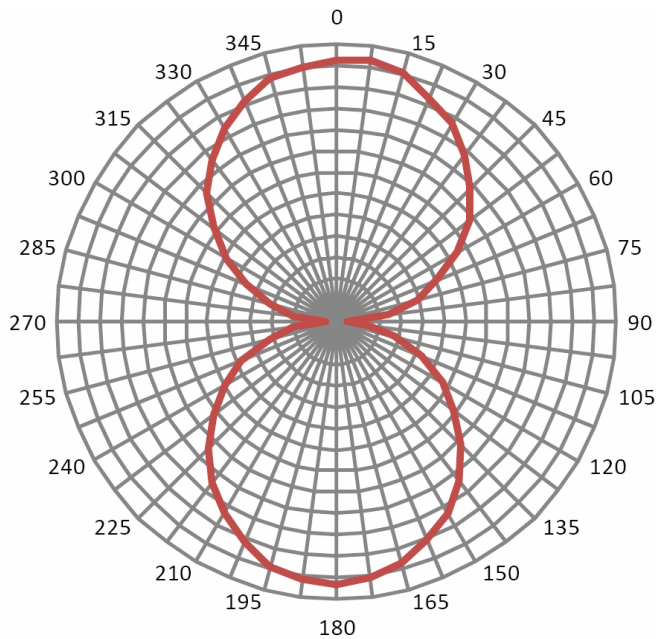


**ALN-9630-FWRC**  
(Clear Wet Inlay)

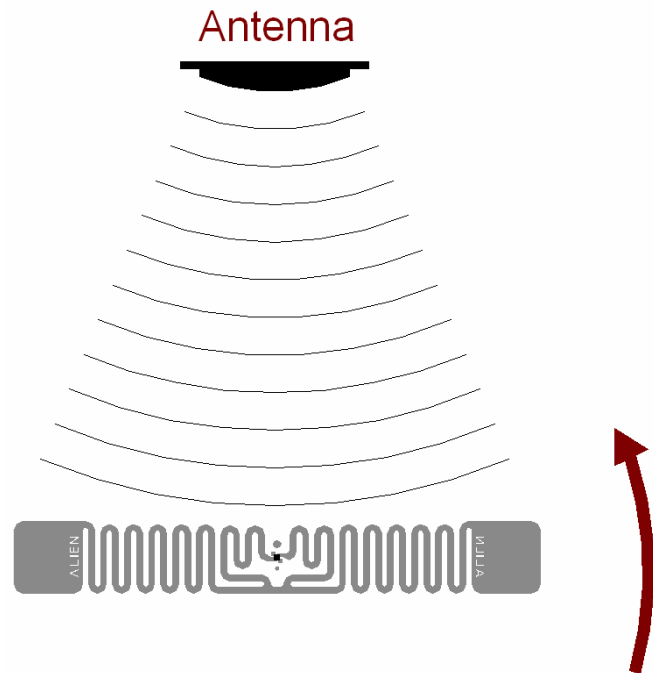


**ALN-9630-FWRW**  
(White Wet Inlay)

## 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

### 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" [73.mm]
Inlay Length	0.5" [12.7mm]
Web Width (FWRW)	3.0" [76.2mm]
Web Pitch	0.625" [15.875]
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 (-FWRW)	PET base without Overlay
White (-FWRW)	TT Printable White Film Overlay
Overlay Adhesive (-FWRW)	General Purpose Permanent
Inlay Adhesive	General Purpose Permanent
Adhesive Application Temperature	> +36.5°F [+2°C]
Adhesive Service Temperature	-4°F to +199.4°F [-20°C to +93°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 -13°F to 122°F [-25°C to +50°C]
Storage Limits	20% to 90% RH Non-condensing -40°F to +158°F [-40°C to +70°C]
Operating Limits	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 at 25°C
RoHs	2002/95/EC Compliant
ESD – HBM / CDM	> 5.0kV / > 1.5kV

#### RFID

ISO/IEC 18000-6C	
EPCglobal Class 1 Gen 2	
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.

December 2010