



ALN-9830 SQUIGLETTE INLAY (HIGGS™-EC)

Merging world class design performance of the Squiggle® inlay family in a more narrow package, The Alien Technology® ALN-9830 “Squiglette” offers superb range and sensitivity, suitable for a variety of smaller form factor applications.



Applications

- Volume Retail/Apparel
- Long Read Range
- General Asset Management
- Asset / Shipping Labeling

FEATURE	DESCRIPTION	BENEFIT
Narrow antenna design	9.5x70mm size, compatible with variety of standard label formats and smaller assets	Removes size constraint of smaller assets and labels while maintaining excellent performance
Reliable read / write performance with Sentinel™ memory	Bit error correction, improved read/write sensitivity, robust memory retention and 200,000 write cycles (2X that of competition)	Robust reliability of stored data, added protection against data loss/corruption

Features:

- › Global GS1 Class 1 Gen 2 (V1.2.0) and ISO/IEC 18000-6C compliance
- › Worldwide operation in all RFID UHF bands (860-960 MHz)
- › 512-Bits of NVRAM Memory
 - 128-EPC Bits
 - 128 User Bits
 - 48 Bit Unique TID
 - 32 Bit Access and 32 bit Kill Passwords
- › User Memory may be Block Perma-Locked as well as read password protected in 32 Bit Blocks
- › *BlastWrite™* and *QuickWrite™* mass-encoding
- › Low power operation for both read and program
- › Dynamic Authentication™ - anti-cloning/anti-counterfeit technology
- › Exceptional operating range, up to 13m with appropriate antenna.
- › Available in high-yield, high capacity dry/wet inlay rolls

Product Overview:

Combining proven design from the Squiggle® tag family in a more narrow package, the **Higgs™-EC UHF RFID IC** based “**Squiglette**” antenna design offers compelling performance for narrower high volume general purpose applications.

Applications include (but not limited to):

- Enterprise / warehouse asset management
- Apparel / Retail hand tags
- Shipping labels
- File folders
- Plastic and non-metallic materials

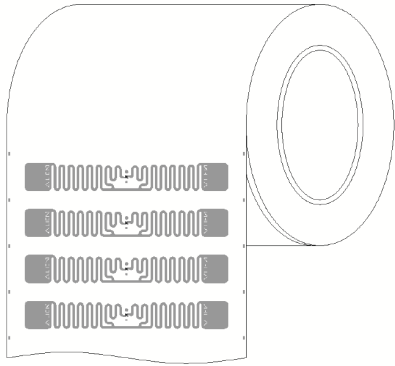
Enhanced memory footprint includes a **48-bit Unique TID for authentication** and **password protected read and write** support capabilities to prevent unauthorized viewing and modification of the tag’s data.

ALN-9830 inlays are **World Tag** compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.

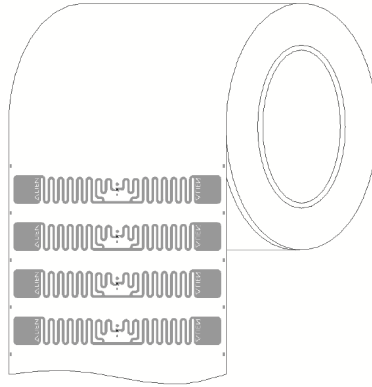




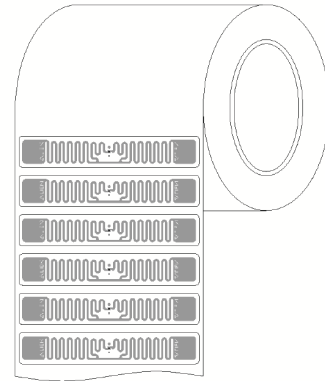
ALN-9830 Inlay Orientation



ALN-9830-R
(Dry Unslit Roll)



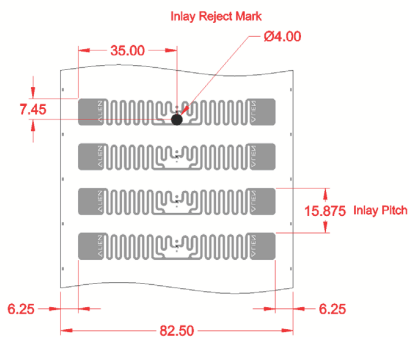
ALN-9830-SR
(Dry Slit Roll)



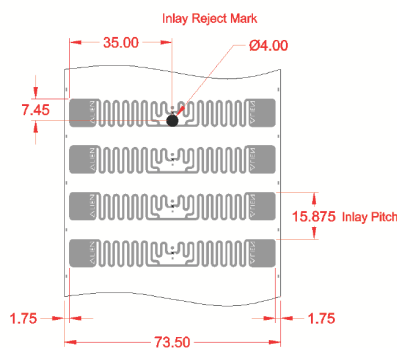
ALN-9830-WRC / -WRW
(Clear / White Wet Inlay)

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

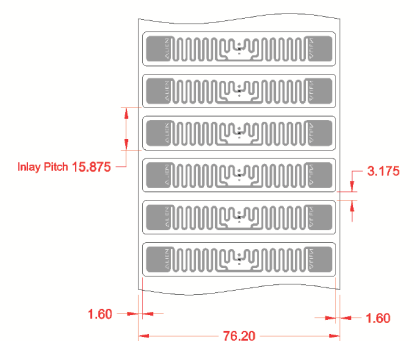
ALN-9830 Inlay Specification



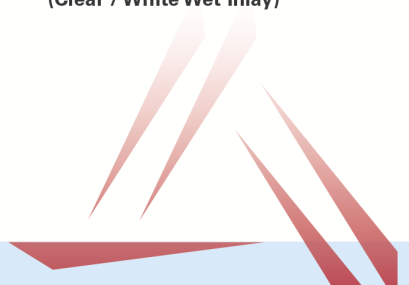
ALN-9830-R
(Dry Unslit Roll)



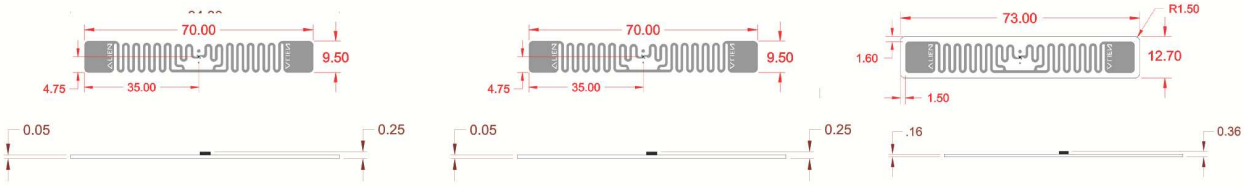
ALN-9830-SR
(Dry Slit Roll)



ALN-9830-WRC / -WRW
(Clear / White Wet Inlay)



ALN-9830 Inlay General Dimensions



ALN-9830-R
(Dry Unslit Inlay)

ALN-9830-SR
(Dry Slit Inlay)

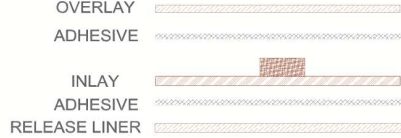
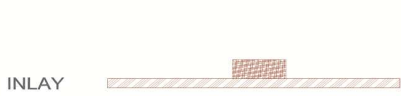
ALN-9830-WRC / -WRW
(Clear / White Wet Inlay)

ALN-9830 Inlay Stackup

DRY INLAY THICKNESS, ±10%	
OVER ANTENNA	0.06 mm
OVER CHIP	0.24 mm

CLEAR WET INLAY THICKNESS, ±10%	
OVER ANTENNA	0.08 mm
OVER CHIP	0.24 mm

WHITE WET INLAY THICKNESS, ±10%	
OVER ANTENNA	0.16 mm
OVER CHIP	0.32 mm

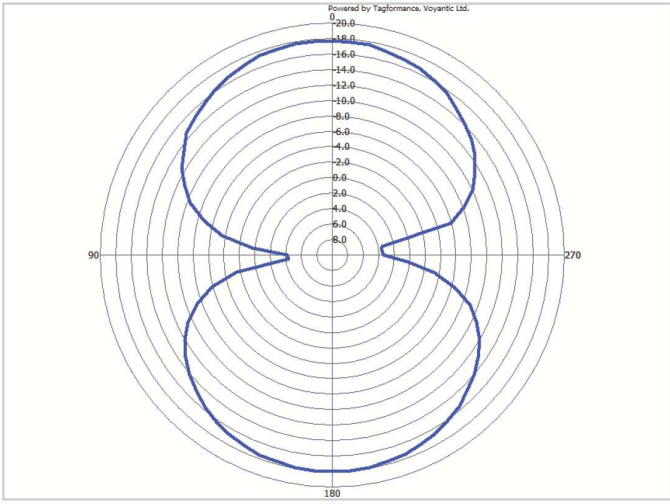


ALN-9830-R / -SR
(Dry Unslit / Slit Inlay)

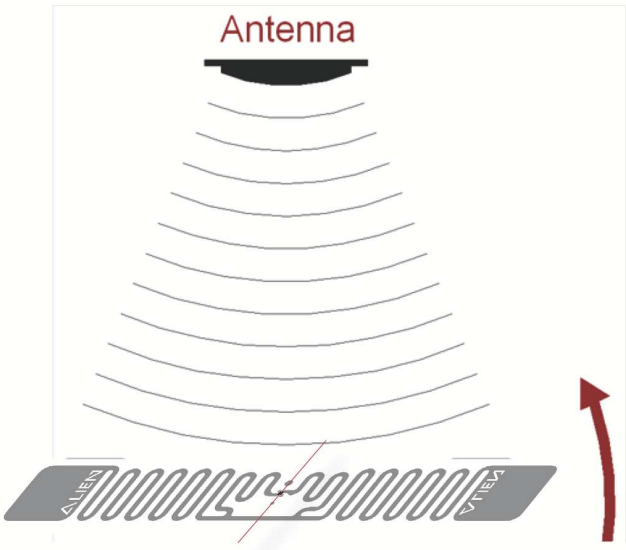
ALN-9830-WRC
(Clear Wet Inlay)

ALN-9830-WRW
(White Wet Inlay)

ALN-9830 Inlay Angular Sensitivity



Angular Sensitivity
(Relative Read Range vs. Orientation)



Angular Sensitivity
Inlay is rotated in the x, y, plane about the z axis



ALIEN® ALN-9830 Squiglette Inlay

ALN-9830 Specifications

Dry Inlay

Antenna Width	2.756" [70mm]
Antenna Length	0.374" [9.5mm]
Web Width (-R)	3.25" [82.5mm]
Web Width (-SR)	2.89" [73.5mm]
Web Pitch	0.625" [15.875mm]
Core Width (-R)	3.25" [82.5mm]
Core Width (-SR)	2.89" [73.5mm]
Core ID	6" [152.4mm]*
Core Material	Fiberboard
Inlays per Roll (-R)	20,000 Nominal
Inlays per Roll (-SR)	30,000 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 (-WRC)	PET base without Overlay
White (-WRW)	TT Printable White Film Only
Overlay Adhesive (-WRW)	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	Dry Inlays: 5 years at +77°F [+25°C] @ 40% RH Wet Inlays: 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	200,000 @ 25°C
RoHs	2002/95/EC (RoHS 1), 2011/65/EU (RoHS 2), 2015/863 (RoHS 10)
REACH	EU 143/2011, EU 125/2012, Annex XIV of EC no. 1907/2006
ESD Limit– HBM / CDM	5.0kV / 1.5kV

RFID

Protocols Supported	ISO/IEC 18000-6C EPCglobal Class 1 Gen 2
Integrated Circuit	Alien Higgs™-EC
Operating Frequency	860–960 MHz
EPC Size	128 Bits
User Memory	128 Bits
TID	32 Bits
Unique TID	48 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, 7377825, 7716208, 7716160, 7688206, 7659822, 7619531, 7615479, 7598867, 7580378, 7576656, 7562083, 7561221, 7559486, 7559131, 7554451, 7551141, 7542301, 7542008, 7531218, 7522055, 7509610, 7489248, 7453705, 7425467, 7417306, 7411503, 7385284, 7377445, 7364084, 7353598, 7342490, 7324061, 7321159, 7301458, 7295114, 7288432, 7265675, 7262686, 7260882, 7253735, 7244326, 7218527, 7214569, 7199527, 7193507, 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, 6623799, 6606247, 6606079, 6590346, 6586338, 6586744, 6554408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

This product is licensed under patents of Round Rock Research, LLC, for use solely with UHF RFID Readers (such as Alien reader products) that are licensed under an agreement with Round Rock Research, LLC.

* Shipped with 6" to 3" plastic core adapter