



ALN-9850 AVIATOR INLAY (HIGGS™-EC)

ALN-9850 Aviator™ by Alien Technology^(R) is an Auburn™ Category U inlay providing non-stop performance from take-off to touch-down.



Applications

- Airline Baggage Tracking
- Aviation Supply Chain
- Inventory & Logistics
- Wide variety of materials

FEATURE	DESCRIPTION	BENEFIT
High-performance orientation-agnostic tag applicable for a wide range of materials and world-wide frequencies.	Provides performance characteristics and angular sensitivity pattern that enables tag access edge-on through a full 360°. Low turn-on threshold and high backscatter.	Can be used in applications where the tag may be completely end-on to the reader antenna i.e. the tag is laid flat and the reader is "looking" at the edge of the tag.
Auburn Category U Compliant	Tested and certified by Auburn University ARC program - Category U, Aviation RFID inlays	Ensures consistent & robust performance in Aviation baggage tag applications worldwide
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:

- > Worldwide operation in all RFID UHF bands (860-960 MHz)
- > Global GS1 Class 1 Gen 2 (V1.2.0) and ISO/IEC 18000-6C compliance
- > Class leading read and write performance
- > 512 bits of NVRAM Memory
 - Up to 128 EPC bits (96-bits nominal)
 - 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
- > Low power operation for both read and write
- > BlastWrite™ and QuickWrite™ mass-encoding
- > Dynamic Authentication™ - anti-cloning/anti-counterfeit technology

Product Overview:

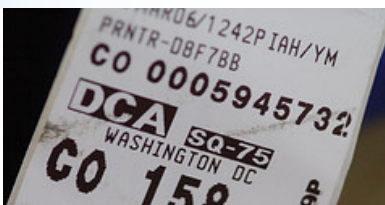
Designed for Aviation baggage labels, Aviation assets and general inventory & logistics, the **Higgs™-EC UHF RFID IC-based ALN-9850 "Aviator"** antenna design delivers industry leading performance and reliability at a competitive price.

Applications include (but not limited to):

- Aviation baggage label tracking
- Aviation supply chain
- General Inventory & Logistics
- Function on wide variety of materials

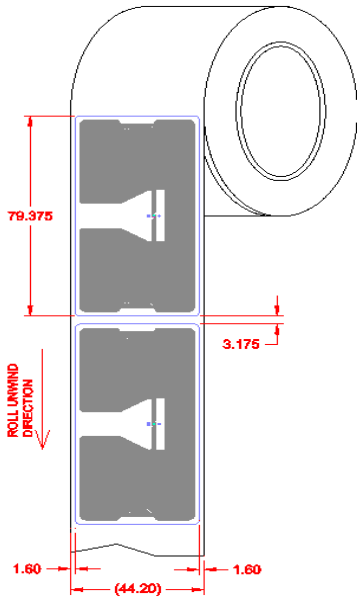
Enhanced memory footprint includes a **48-bit Unique TID for authentication** and **serialization** applications and **password protected read and write** support to prevent unauthorized viewing and modification of the tag's data.

ALN-9850 inlays are World Tag compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Africa and Asia.





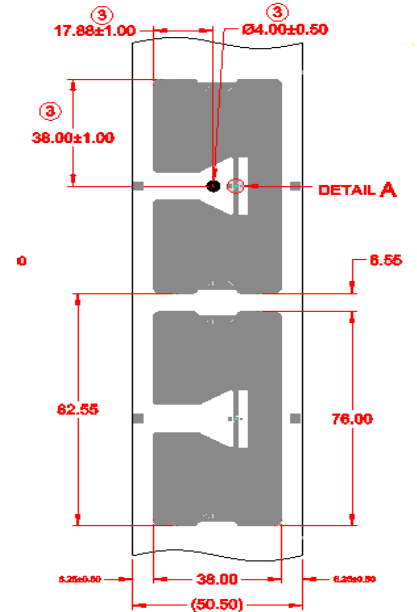
ALN-9850 Inlay Specifications & General Dimensions



ALN-9850-90WRW

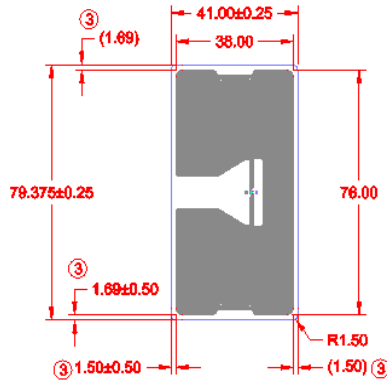
(Wet White Roll & Dimensions)

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



ALN-9850-90R

(Dry Unslit Roll & Inlay Dimensions)



ALN-9850-90WRW

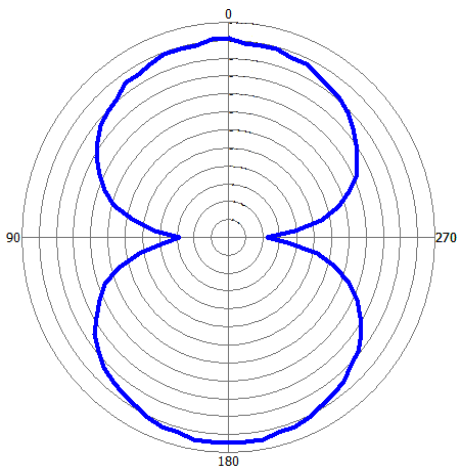
(Wet White Detailed Dimensions)

ALN-9850-90WRW Inlay Stackup

WET INLAY THICKNESS, ±10%	
OVER ANTENNA	0.06mm
OVER CHIP	0.35mm



ALN-9850 Inlay Angular Sensitivity



Angular Sensitivity
(Relative Read Range vs. Orientation)

ALN-9850-90R Inlay Stackup

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





ALIEN. ALN-9850 Aviator Inlay

ALN-9850 Specifications

Dry Inlay	
Antenna Width	1.496" [38mm]
Antenna Length	2.992" [76mm]
Web Width (-90R)	2.008" [50.5mm]
Inlay Pitch	3.250" [82.55mm]
Core Width (-90R)	2.008" [50.5mm]
Core ID	6" [152.4mm]*
Core Material	Fiberboard
Inlays per Roll	4,500 (+/- 200)
Maximum Roll OD	<12" [304.8mm]
Roll Labeling Data	Roll #, Quantity

Wet Inlay	
Antenna Width	1.614" [41mm]
Antenna Length	3.125" [79.4mm]
Web Width (-90WRW)	1.740" [44.2mm]
Inlay Pitch	3.250" [82.55mm]
Core Width (-90WRW)	1.740" [44.2mm]
Core ID	6" [152.4mm]*
Core Material	Fiberboard
Inlays per Roll	4,500 Nominal
Maximum Roll OD	<16" [404.6mm]
Roll Labeling Data	Roll #, Quantity

Environmental	
Shelf Life	Dry Inlays: 5 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, 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 GS1 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

* Shipped with 6" to 3" plastic core adapter

January 21, 2020

Copyright © 2020 Alien Technology LLC. All rights reserved.

Alien, Alien Technology, the Alien Technology logo, Higgs, Dynamic Authentication, QuickWrite, BlockWrite, Squiggle, and the Squiggle logo are trademarks or registered trademarks of Alien Technology LLC in the U.S. and other countries.

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, 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, 6623599, 6606247, 6606079, 6590346, 6586338, 6566744, 6555408, 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.



Alien Technology
845 Embedded Way
San Jose, CA 95138-1030
866-RFID NOW
www.alientechnology.com