ALN-9745 "SlimLine" Inlay (Higgs™ 4)

The Alien Technology® ALN-9745 "SlimLine" RFID inlay is a specialized thin-form factor high-performance tag. The ALN-9745 brings all the Higgs™ 4 advantages to a tag that can fit in extremely narrow confined spaces.

Applications

- Book spines
- Doors
- Cigarette boxes
- Small package labels
- Narrow form factor assets
- Shipping labels

FEATURE	DESCRIPTION	BENEFIT
Ultra slim form factor with performance similar to the Squiggle tag	Approaches the well regarded Squiggle/Squigglette performance tag in an ultra narrow form-factor	Smaller form factor, still robust, proven, and reliable
Next generation Higgs™ 4 features and performance	A mass-market optimized tag with class leading read and write performance. Supports Aliens *Quick*-**Write**™ and *Blast***Write**™	Rapid programming of serialized tags and excellent read/write performance

Features:

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

› Worldwide operation in the RFID UHF bands (840-960 MHz)

› 448-Bits of NVRAM Memory
  - 128-EPC Bits
  - 128 User Bits
  - 64 Bit Unique TID
  - 32 Bit Access and 32 bit Kill Passwords

› Pre-Programmed with a unique, unalterable 64-bit serial number

› User Memory can be Block Perma-Locked as well as read password protected in 32 Bit Blocks

› Class leading read and write performance

› *Blast***Write**™ and *Quick***Write**™ mass-encoding

› Dynamic Authentication™ - anti-cloning/anti-counterfeit technology

› Exceptional operating range, up to 11m with appropriate antenna.

› Available in high-yield, high capacity dry/wet inlay rolls

Product Overview:

Powered by Alien®'s break-through **Higgs™ 4 UHF RFID IC** and **innovative "SlimLine" antenna design**, the ALN-9745 delivers industry leading EPC Gen 2 performance and reliability in an ultra-narrow form-factor, making it ideal for mounting on narrow objects and boxes as well usage in narrow label applications.

With its Higgs-4 core, the "SlimLine" delivers next generation read and write performance, yet is completely **optimized for the highest volume enterprise, retail, and apparel applications.**

An optimized memory footprint includes a 32-bit TID, **a 64-bit Unique TID for authentication** and **next generation serialization** applications, a 128-bit EPC memory bank, 128-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-9745 inlays are World Tag compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.
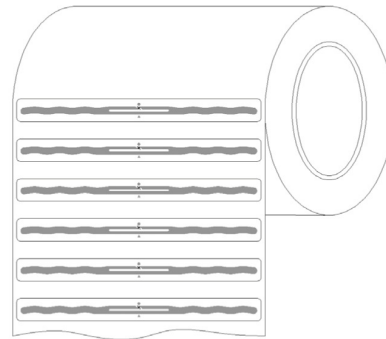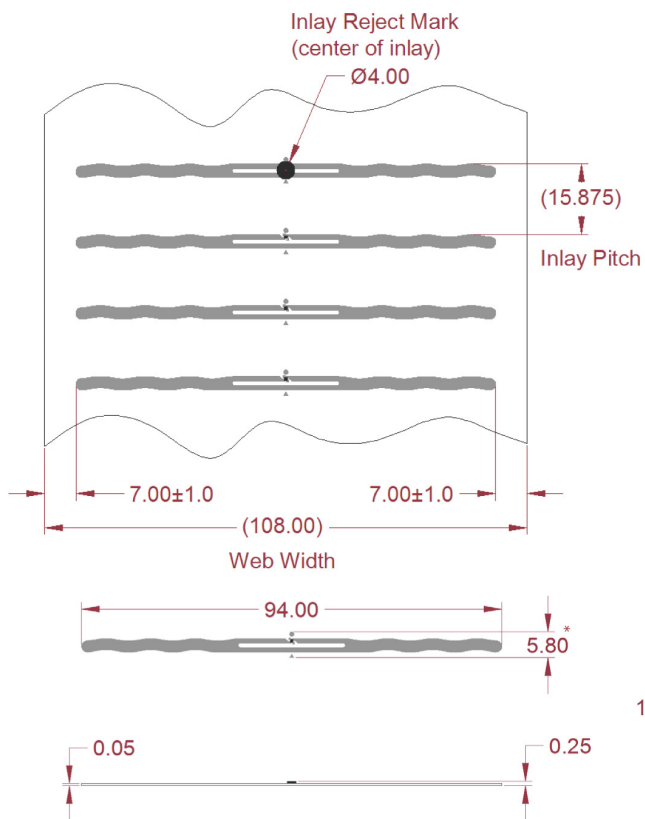
ALN-9745 Inlay Orientation
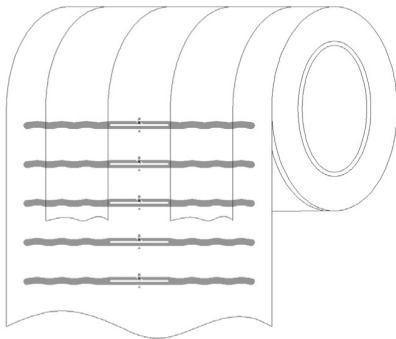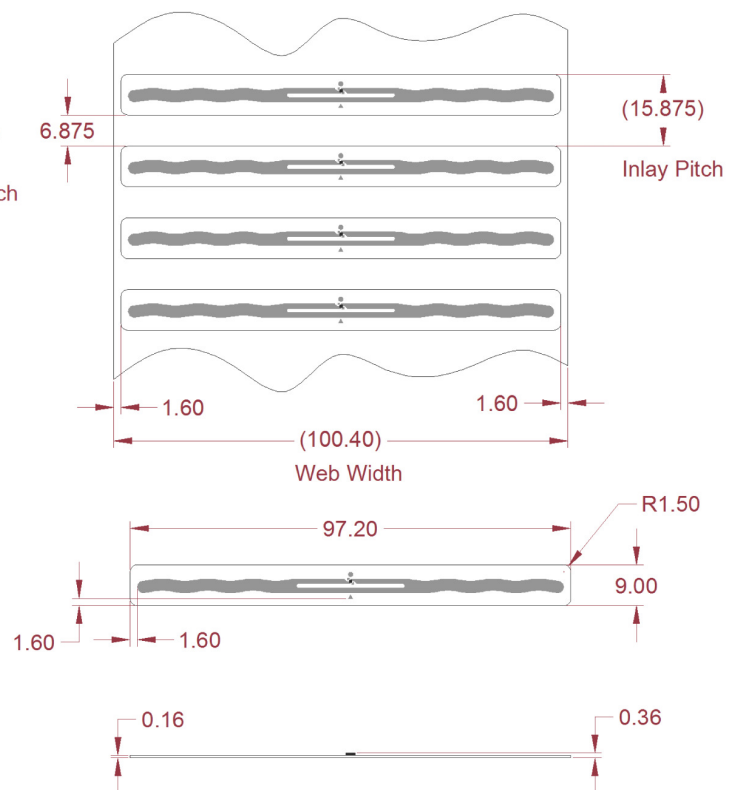
ALN-9745-R

(Dry Unslit Roll)

ALN-9745-WRW

(White Wet Inlay)

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

ALN-9745 Inlay/Tag Specification

Inlay Reject Mark
(center of inlay)
Ø4.00

(15.875)

Inlay Pitch

7.00±1.0   7.00±1.0

(108.00)

Web Width

94.00

5.80 *

0.05   0.25

6.875

(15.875)

Inlay Pitch

1.60   1.60

(100.40)

Web Width

97.20

R1.50

9.00

1.60   1.60

0.16   0.36

ALN-9745-R

(Dry Unslit Roll)
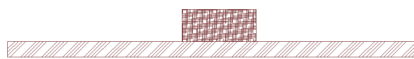
ALN-9745-WRW

(White Wet Inlay)

* NOTE: 5.80mm includes the two inlay targets that are not part of the functional antenna. 3.05mm is the functional antenna height (length).
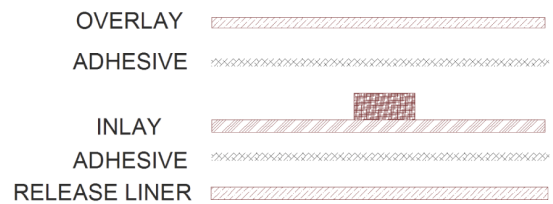
ALN-9745 Inlay Stackup

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

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

OVERLAY
ADHESIVE

INLAY
ADHESIVE
RELEASE LINER
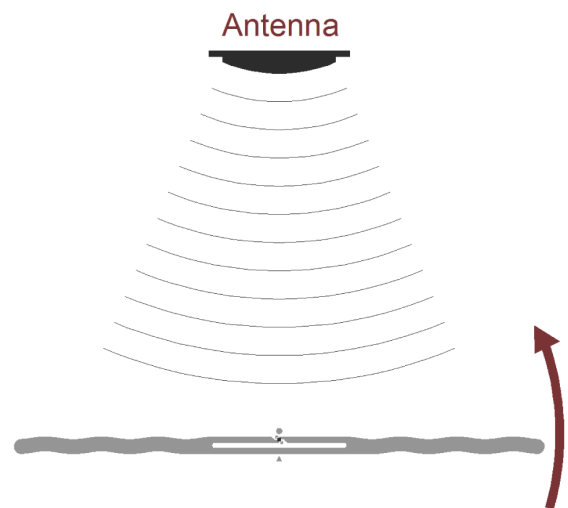
INLAY

ALN-9745-R
(Dry Unslit Inlay)

ALN-9745-WRW
(White Wet Inlay)

ALN-9745 Inlay Angular Sensitivity
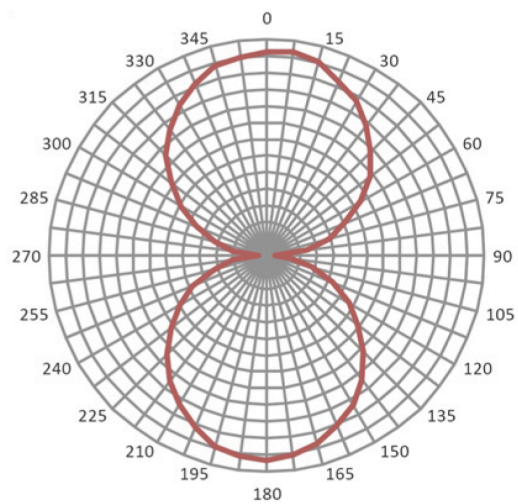
Antenna

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-9745 Specifications

Dry Inlay

Antenna Width	3.701″ [94.0mm]
Antenna Length	0.228″ [5.8mm]*
Web Width	4.252″ [108.0mm]
Web Pitch	0.625″ [15.875mm]
Core Width	4.252″ [108mm]
Core ID	6″ [152.4mm]**
Core Material	Fiberboard
Interleaf Material	Paper
Inlays per Roll	20,000 Nominal
Maximum Roll OD	< 12″ [304.8mm]
Roll Labeling Data	Roll #, Quantity

* NOTE: 5.80mm includes the two inlay targets that are not part of the functional antenna. 3.05mm is the functional antenna height (length).

Wet Inlay

Inlay Width	3.827″ [97.2mm]
Inlay Length	0.354″ [9mm]
Web Width	3.95″ [100.4mm]
Web Pitch	0.625″ [15.875mm]
Core Width	3.953″ [100.4mm]
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
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

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	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-4
EPCglobal Certificate	950110126000001084
Operating Frequency	840–960 MHz
EPC Size	128 Bits
User Memory	128 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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