



# 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 pre-encoded MCS serialization and Aliens <i>BlastWrite™</i>	Rapid programming of serialized tags and excellent read/write performance

## Features:

- › Designed to meet EPCglobal Gen2 (V 1.2.0) 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
- › Pre-encoded Multivendor Chip Serialization (MCS)
- › *BlastWrite™* and *QuickWrite™* 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.**

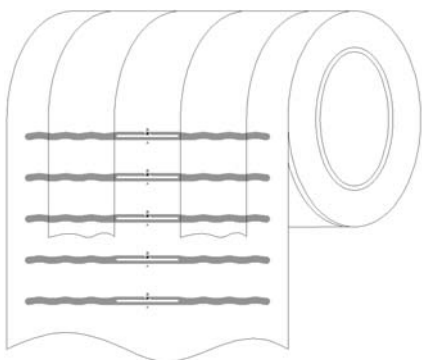
An optimized memory footprint includes a 32-bit TID, a **64-bit Unique TID for authentication** and **next generation serialization** applications, a 128-bit EPC memory bank, 128-bits of user memory for distributed data applications, and **password protected read and write** support capabilities to prevent 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.

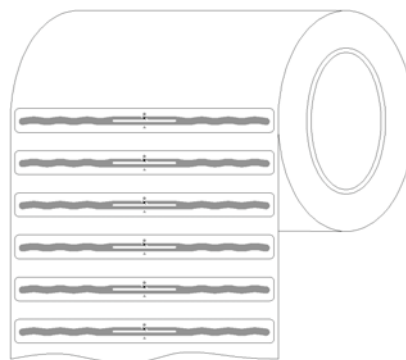


# ALN 9745 SlimLine Inlay

## ALN-9745 Inlay Orientation



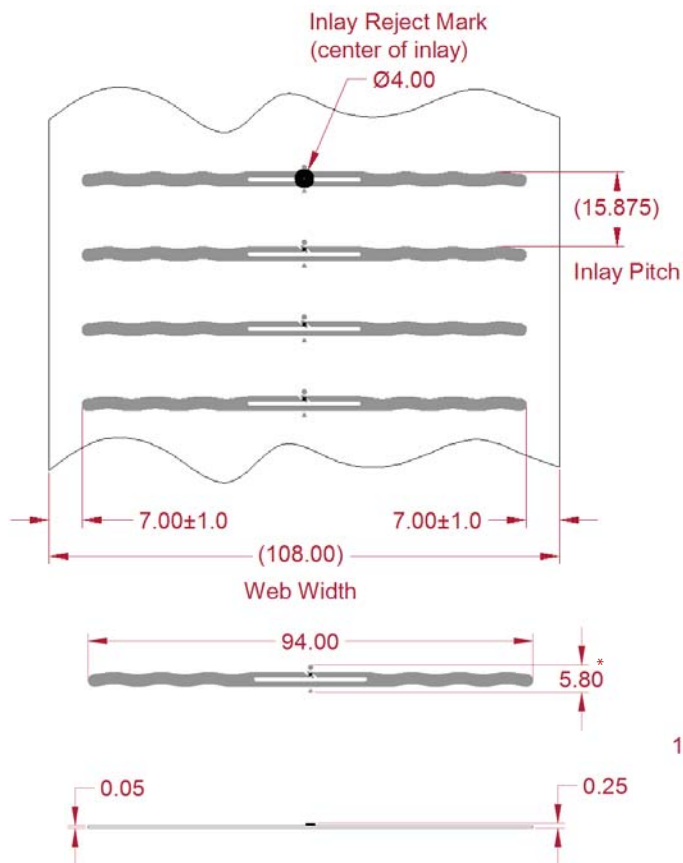
**ALN-9745-R**  
(Dry Unslit Roll)



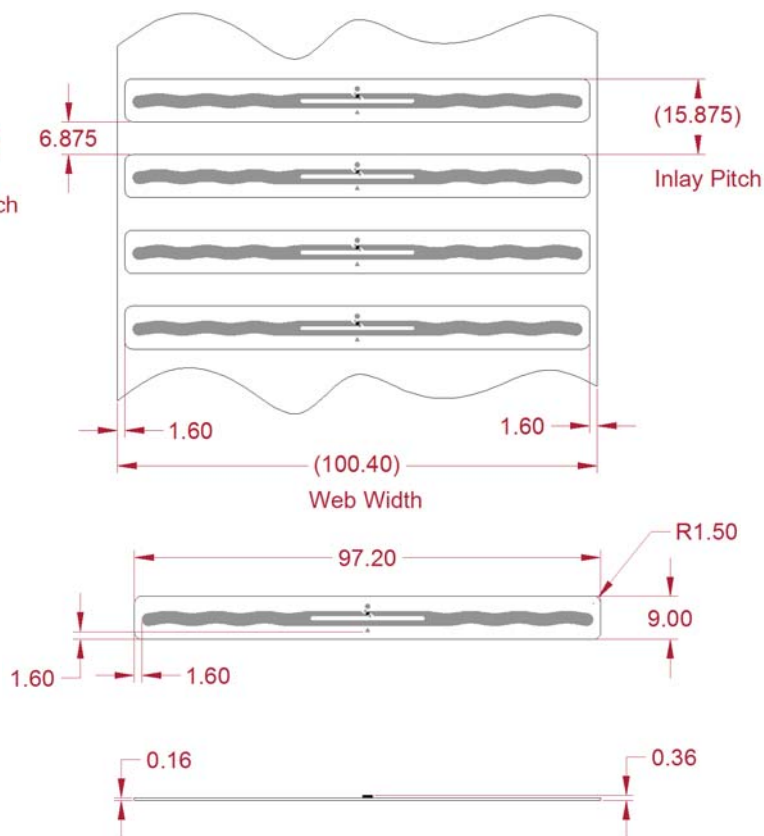
**ALN-9745-WRW**  
(White Wet Inlay)

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

## ALN-9745 Inlay/Tag Specification



**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).





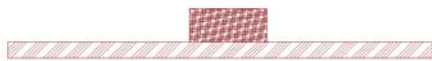
# ALN 9745 SlimLine Inlay

## ALN-9745 Inlay Stackup

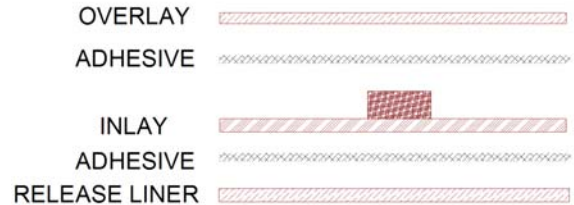
DRY INLAY THICKNESS, $\pm 10\%$	
OVER ANTENNA	0.05 mm
OVER CHIP	0.25 mm

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

INLAY

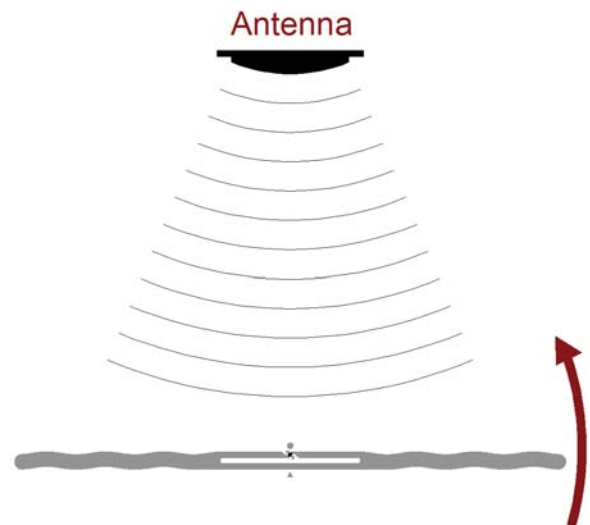
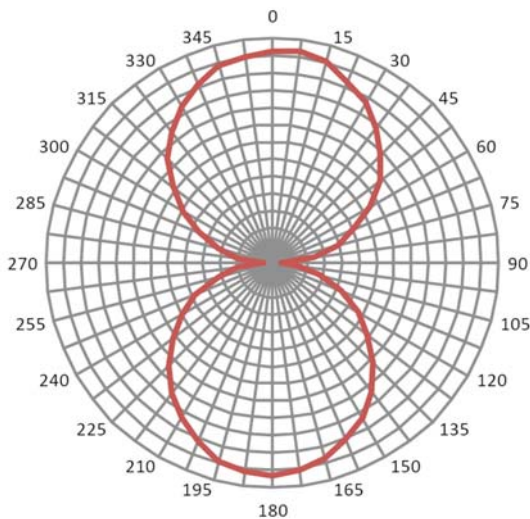


**ALN-9745-R**  
(Dry Unslit Inlay)



**ALN-9745-WRW**  
(White Wet Inlay)

## ALN-9745 Inlay Angular Sensitivity





## ALN 9745 SlimLine Inlay

### 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	> +36.5°F [+2°C]
Adhesive Service Temperature	-4°F to +199.4°F [-20°C to +93°C]
Release Liner	40# SCK

\*\* Shipped with 6" to 3" plastic core adapter

#### 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 Compliant
REACH	1907/2006/EC Compliant
ESD – 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

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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, 7737825, 7716208, 7716160, 7688206, 7659822, 7619531, 7615479, 7598867, 7580378, 7576656, 7562083, 7561221, 7559486, 7559131, 7554451, 7551141, 7542301, 7542008, 7531218, 7520255, 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, 6623579, 6606247, 6606079, 6590346, 6586338, 6567644, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

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