



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 (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
- › 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:

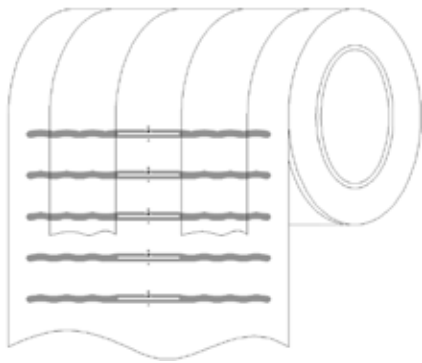
Powered by Alien®s break-through **Higgs4 UHF RFID IC** and **innovative SlimLine antenna design**, the ALN-9745 delivers industry leading EPC Gen 2 performance and reliability in an ultra-narrow form-factor, making it ideal for mounting on narrow objects and boxes as well usage in narrow label applications.

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.**

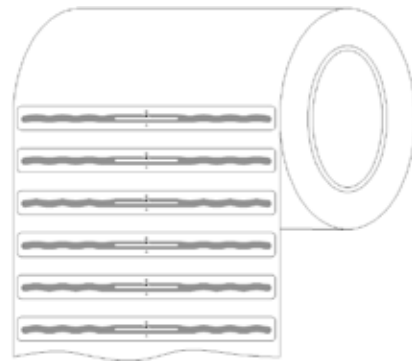
An optimized memory footprint includes a 32-bit TID, a **64-bit Unique TID for authentication** and **next generation serialization** applications, a 128-bit EPC memory bank, 128-bits of user memory for distributed data applications, and **password protected read and write** support capabilities to prevent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



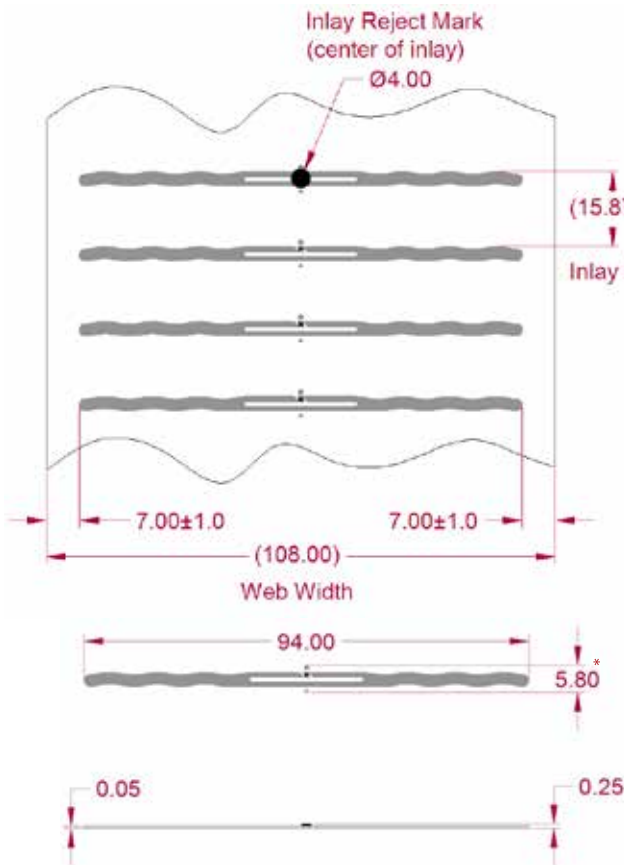
ALN-9745-R
(Dry Unslit Roll)



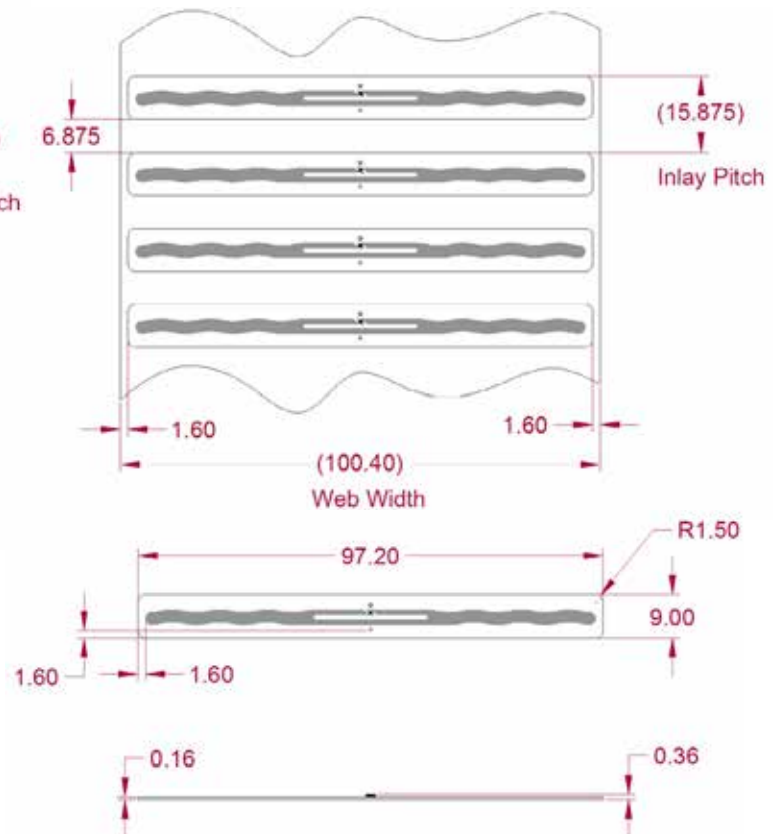
ALN-9745-WRW
(White Wet Inlay)

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

ALN-9745 Inlay/Tag Specification



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).



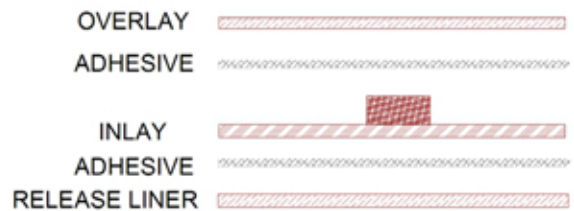
ALN-9745 Inlay Stackup

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

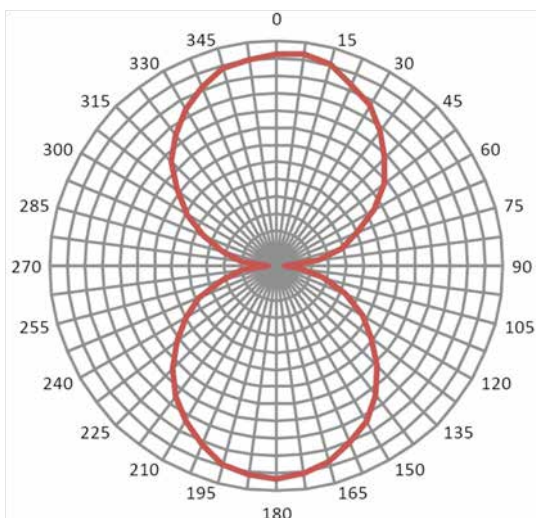


ALN-9745-R
(Dry Unslit Inlay)

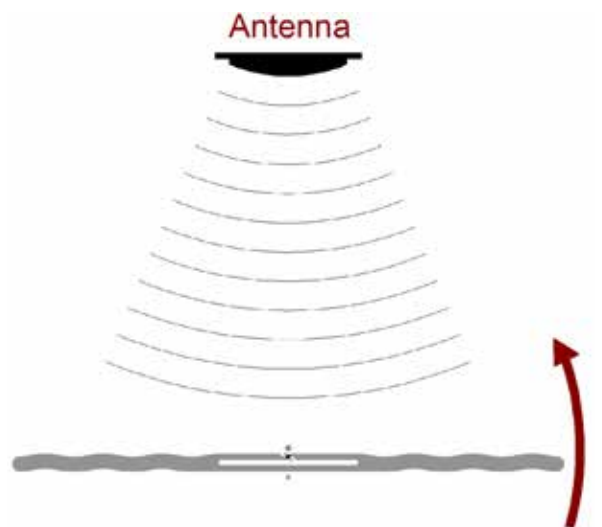


ALN-9745-WRW
(White Wet Inlay)

ALN-9745 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-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

** 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 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	840960 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, 7522055, 7509610, 7488248, 7453705, 7425467, 7417306, 7411903, 7385284, 7377445, 7364084, 7353598, 7342490, 7324061, 7321159, 7301458, 7295114, 7288432, 7269675, 7262086, 7260882, 7253735, 7244326, 7218527, 7214569, 7199527, 7195364, 7173526, 7172910, 7172769, 7141176, 7113250, 7101502, 7080444, 7070651, 7069224, 7045328, 6996644, 6988667, 6985361, 6981154, 6970219, 6921257, 6942155, 6933948, 6927085, 6916380, 6780956, 6781353, 6693384, 6683663, 6665044, 6657289, 6623579, 6606247, 6606079, 6590346, 6586338, 6566744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

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