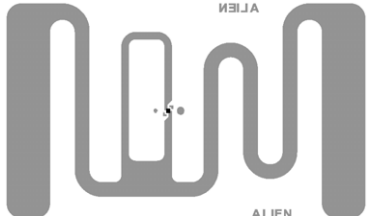


## “GT” GARMENT TAG INLAY

The Alien Technology® ALN-9728 “GT” is a 30mm x 50mm RFID inlay specifically designed for high read performance in the retail and apparel markets. This tag has a form-factor especially suitable for hang-tags.



### Applications

- Retail
- Apparel
- Hang-tags
- Joker tags
- Labels
- Document tracking

| FEATURE  | DESCRIPTION  | BENEFIT   |
|--|--|---|
| 30mm x 50mm form-factor  | Designed to fit the form-factor and everyday retail use cases where items are tightly packed on shelves or hangers                               | Extremely high read-rates in real-life, every day retail environments     |
| Tuned for use in retail environments with packed shelves or hanging garments |  |   |
| 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 “GT” antenna design**, the ALN-9728 delivers industry leading EPC Gen 2 performance and reliability for retail and apparel applications where items are tightly packed on shelves or hangers.

With its Higgs-4 core, the “GT” delivers next generation read and write performance, yet is completely **optimized for the highest volume enterprise, retail, and automotive 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.

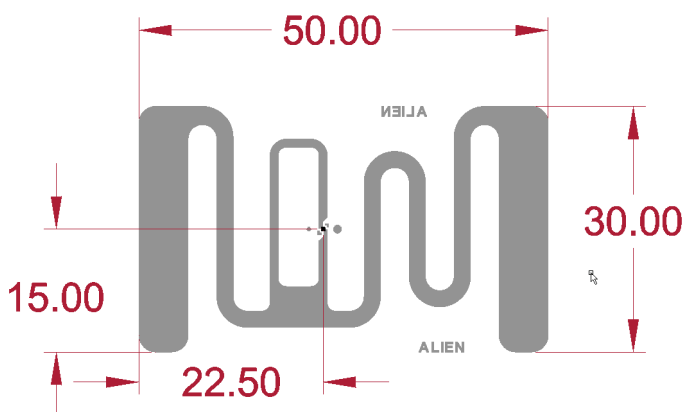
ALN-9728 inlays are World Tag compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.



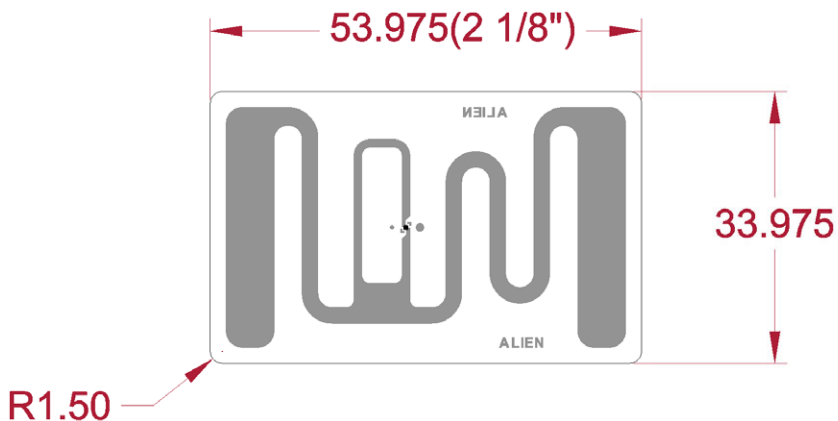
# ALN-9728 "GT" Garment Tag Inlay

All dimensions in millimeters unless specified otherwise

## ALN-9728 Basic Dimensions

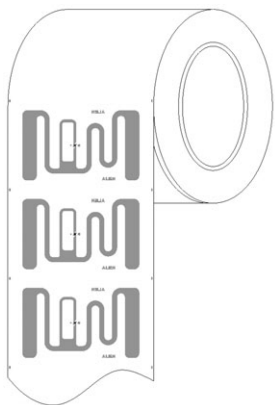


ALN-9728 Dry

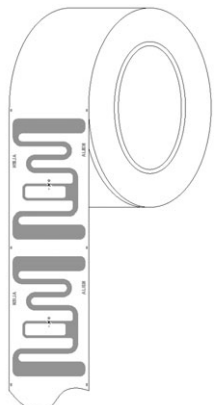


ALN-9728 Wet

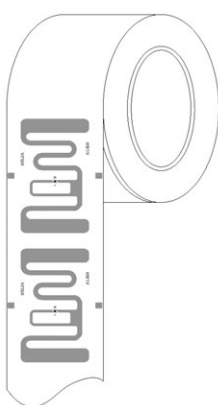
## ALN-9728 Inlay Orientation



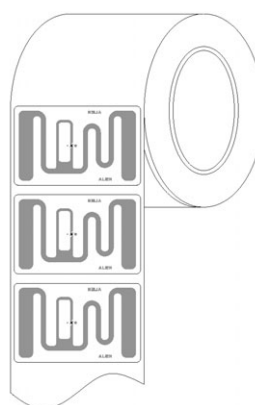
ALN-9728-R (Non-Rotated Dry Unslit Roll) and ALN-9728-SR (Non-Rotated Narrow Dry Unslit Roll)



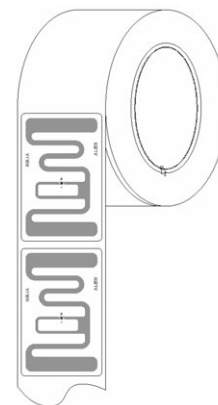
ALN-9728-90SR (Rotated 90° Dry Slit Roll)



ALN-9728-90R (Rotated 90° Dry Wide Slit Roll)



ALN-9728-WRW (White Wet Roll Inlay)

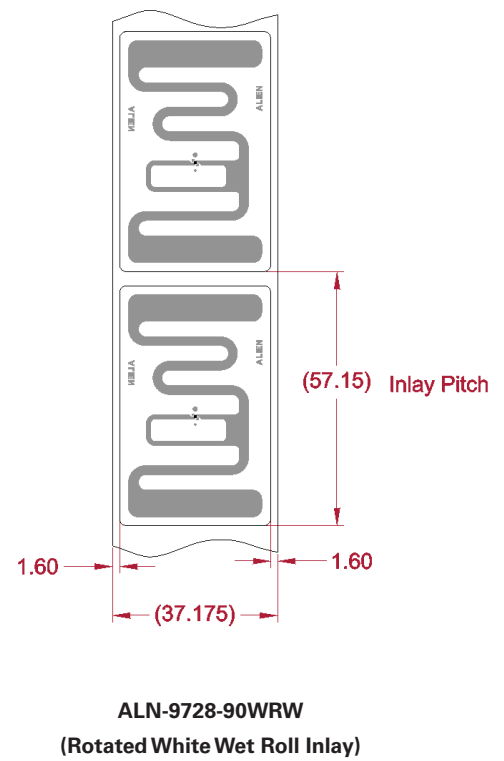
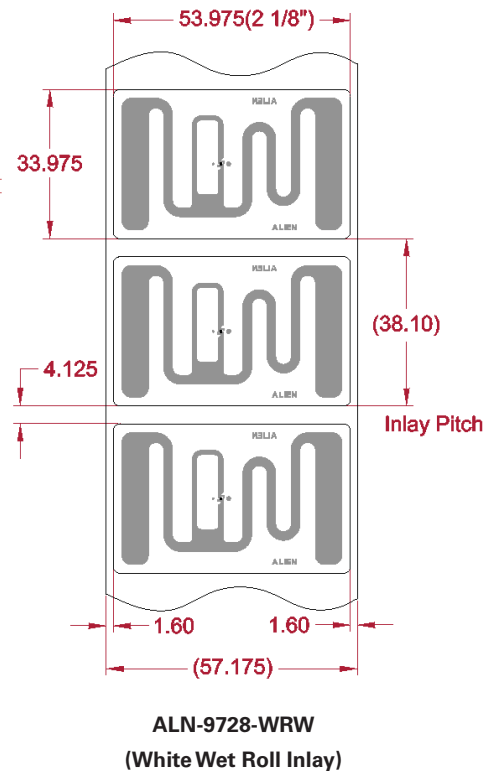
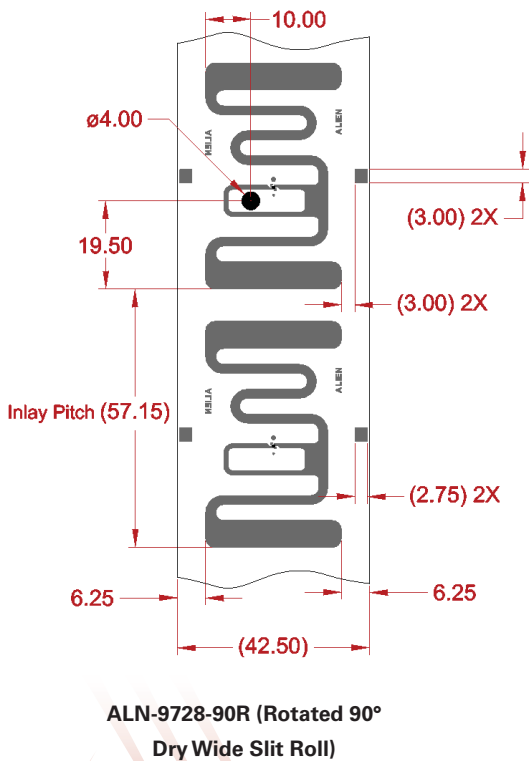
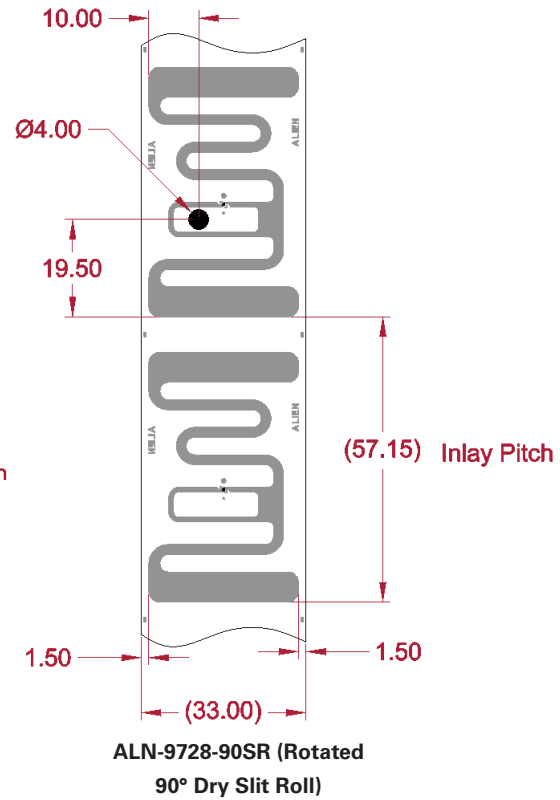
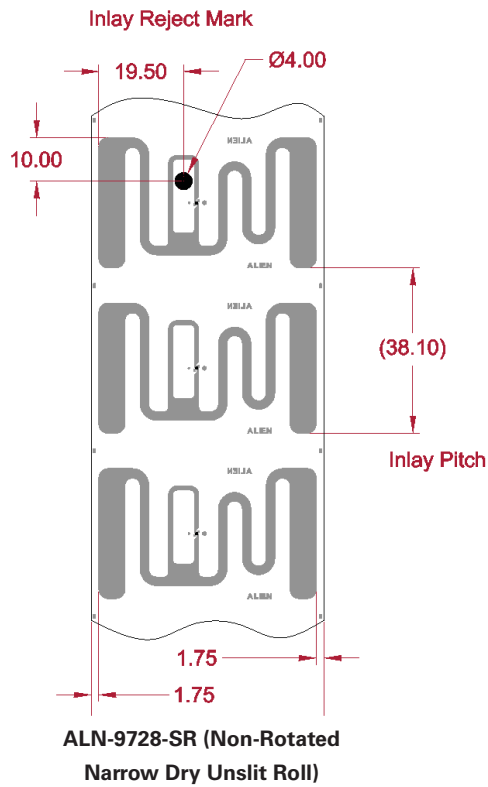
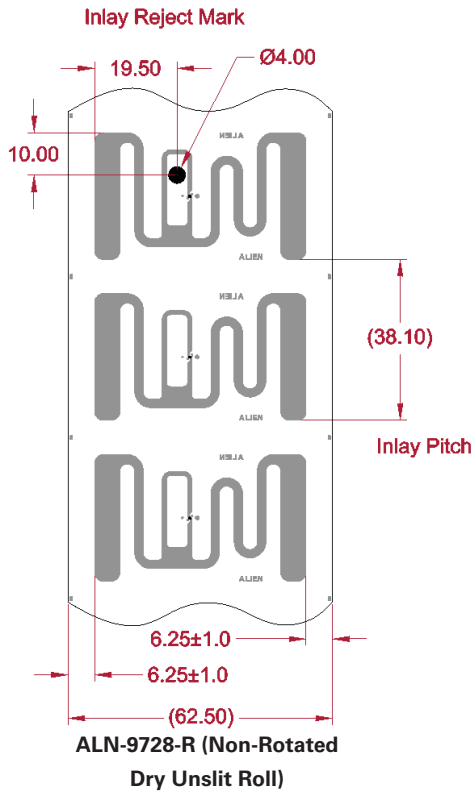


ALN-9728-90WRW (Rotated White Wet Roll Inlay)

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



ALN-9728 Inlay Specification





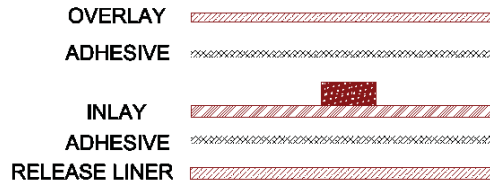
ALN-9728 Inlay Stackup

| 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 |

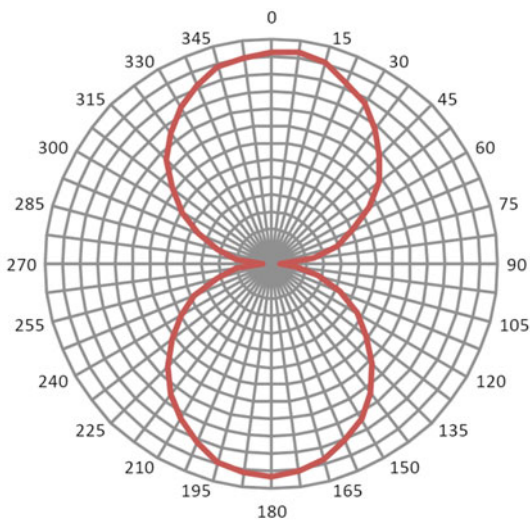


**ALN-9728-R/90SR/90R**  
(Dry Slit Roll Non-Rotated/Rotated/Wide Rotated)

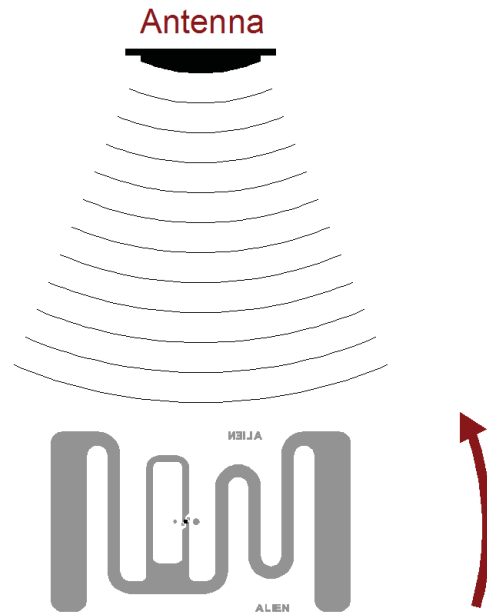


**ALN-9728-WRW/90WRW**  
(White Wet Roll Inlay)

ALN-9728 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-9728 "GT" Garment Tag Inlay

## ALN-9728 Specifications

| Dry Inlay          | Non-Rotated ALN-9728-R | Non-Rotated Narrow ALN-9728-SR | Rotated ALN-9728-90SR | Rotated Wide ALN-9728-90R |
|--------------------|------------------------|--------------------------------|-----------------------|---------------------------|
| Antenna Width      | 1.97" [50mm]           | 1.97" [50mm]                   | 1.18" [30mm]          | 1.18" [30mm]              |
| Antenna Length     | 1.18" [30mm]           | 1.18" [30mm]                   | 1.97" [50mm]          | 1.97" [50mm]              |
| Web Width          | 2.46" [62.5mm]         | 2.11" [53.5mm]                 | 1.3" [33mm]           | 1.67" [42.5mm]            |
| Web Pitch          | 1.5" [38.1mm]          | 1.5" [38.1mm]                  | 2.25" [57.15mm]       | 2.25" [57.15mm]           |
| Core Width         | 2.46" [62.5mm]         | 2.46" [62.5mm]                 | 1.3" [33mm]           | 1.67" [42.5mm]            |
| Core ID            | 6" [152.4mm]*          |                                |                       |                           |
| Core Material      | Fiberboard             |                                |                       |                           |
| Inlays per Roll    | 7,500 Nominal          |                                |                       |                           |
| Maximum Roll OD    | < 12" [304.8mm]        |                                |                       |                           |
| Roll Labeling Data | Roll #, Quantity       |                                |                       |                           |

| Wet Inlay                        | Non-Rotated ALN-9728-WRW          | Rotated ALN-9728-90WRW |
|----------------------------------|-----------------------------------|------------------------|
| Inlay Width                      | 2.125" [53.975mm]                 | 1.34" [33.975mm]       |
| Inlay Length                     | 1.34" [33.975mm]                  | 2.125" [53.975mm]      |
| Web Width                        | 2.25" [57.175mm]                  | 1.46" [37.175mm]       |
| Web Pitch                        | 1.5" [38.1mm]                     | 2.25" [57.15mm]        |
| Core Width                       | 2.25" [57.175mm]                  | 1.46" [37.175mm]       |
| Core ID                          | 6" [152.4mm]*                     |                        |
| Core Material                    | Fiberboard                        |                        |
| Inlays per Roll                  | 7,500 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

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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, 7561224, 7559486, 7559138, 7554451, 7551141, 7542301, 7542008, 7531218, 7522055, 7500610, 7489248, 7453705, 7425467, 7417306, 7411503, 7385284, 7377445, 7364084, 7353598, 7342490, 7324061, 7321159, 7301458, 7295114, 7288432, 7265675, 7262866, 7260882, 7253735, 7244326, 7218527, 7214569, 7199527, 7193504, 7173528, 7172910, 7172789, 7141176, 7113250, 7101502, 7080444, 7070851, 7068224, 7046328, 6998667, 6988667, 6985361, 6980184, 6970219, 6952157, 6942155, 6933848, 6927085, 6816380, 6806096, 6731353, 6693384, 6683663, 6665044, 6657289, 6623579, 6606247, 6606079, 6590346, 6586338, 6566744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

27th February 2013

| 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]<br>20% to 90% RH Non-condensing  |
| Operating Limits    | -40°F to +158°F [-40°C to +70°C]<br>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 and 2005/618/EC Compliant                             |
| REACH               | 1907/2006/EC Compliant (SVHC and ECHA)                           |
| ESD – HBM / CDM     | > 5.0kV / > 1.5kV  |

| RFID                |   |
|---------------------|---|
| Protocols Supported | ISO/IEC 18000-6C<br>EPCglobal Class 1 Gen 2 |
| Integrated Circuit  | Alien Higgs-4                               |
| 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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