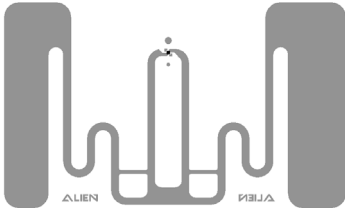




# ALN-9828

## “GT” GARMENT TAG INLAY (HIGGS™-EC)

The Alien Technology® ALN-9828 “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™-EC features and performance	A mass-market optimized tag with Best-In-Class read (-22.5 dBm) and write (-19 dBm) performance. Supports Aliens <i>QuickWrite™</i> and <i>BlastWrite™</i>	Rapid programming of serialized tags and excellent read/write performance
New error correcting Sentinel™ Memory and best-in-class reliability.	A unique and robust error correcting memory architecture fixes single bit errors and flags dual bit errors. 200,000 write cycles, two times that of competitors.	Provides customers reassurance the stored data is protected and data loss/corruption minimized.

### Features:

- › Designed to meet EPCglobal Gen2 (V1.2.0) and ISO/IEC 18000-6C
- › Worldwide operation in the RFID UHF bands (860-960 MHz)
- › 512-Bits of NVRAM Memory
  - 128-EPC Bits
  - 128 User Bits
  - 80 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
- › *BlastWrite™* and *QuickWrite™* mass-encoding
- › Dynamic Authentication™ - anti-cloning/anti-counterfeit technology
- › Exceptional operating range, up to 13m with appropriate antenna.
- › Available in high-yield, high capacity dry/wet inlay rolls

### Product Overview:

Powered by Alien®’s break-through **Higgs™-EC UHF RFID IC** and **innovative “GT” antenna design**, the ALN-9828 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 **80-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.

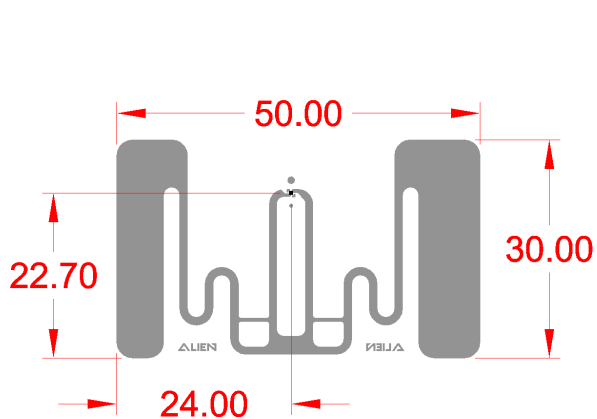
ALN-9828 inlays are World Tag compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.



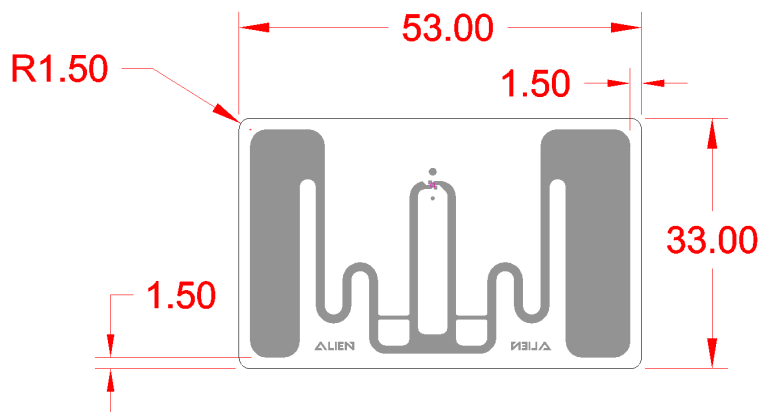
# ALN-9828 "GT" Garment Tag Inlay

All dimensions in millimeters unless specified otherwise

## ALN-9828 Basic Dimensions

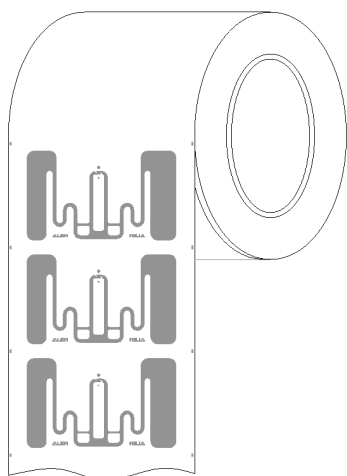


ALN-9828 Dry

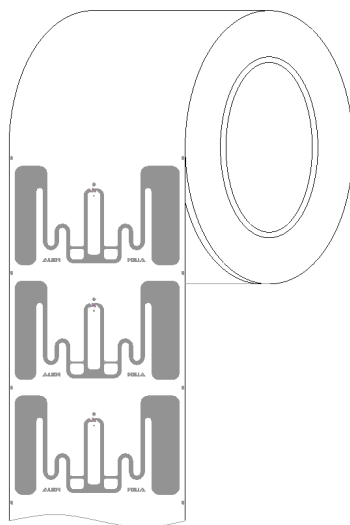


ALN-9828 Wet

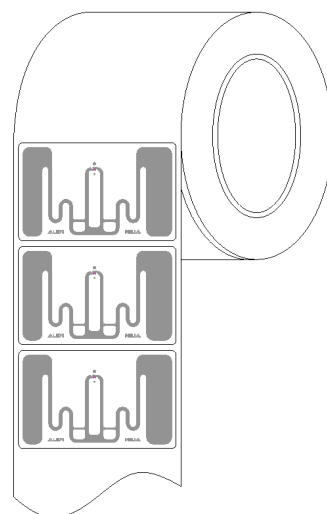
## ALN-9828 Inlay Orientation



ALN-9828-R  
(Dry Unslit Roll)



ALN-9828SR  
(Dry Slit Roll)

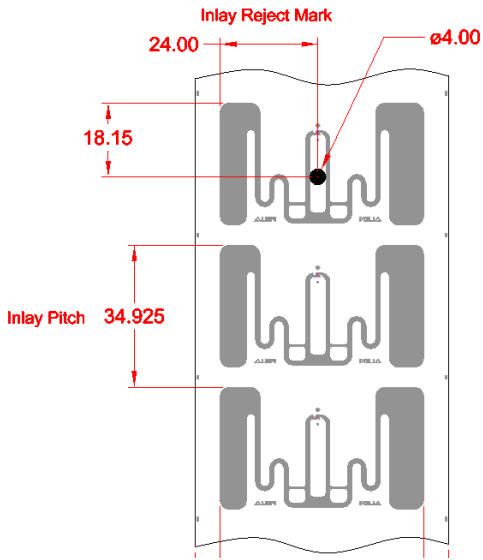


ALN-9828-WRW  
(White Wet Roll)

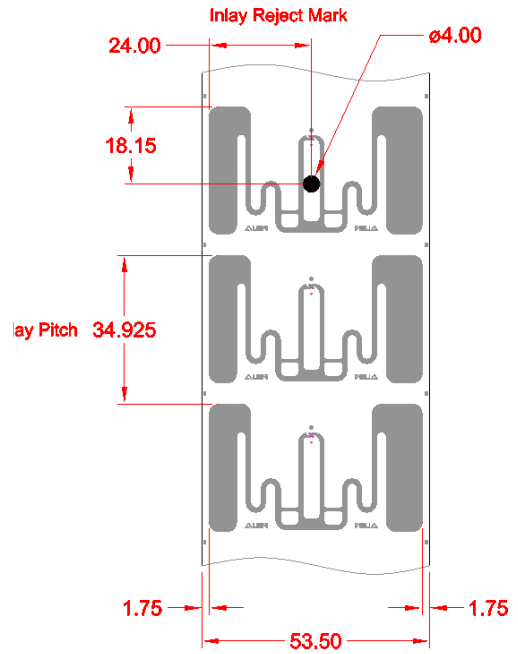
Standard Alien Inlay rolls unwind with metal antenna side facing outward, with respect to the core.



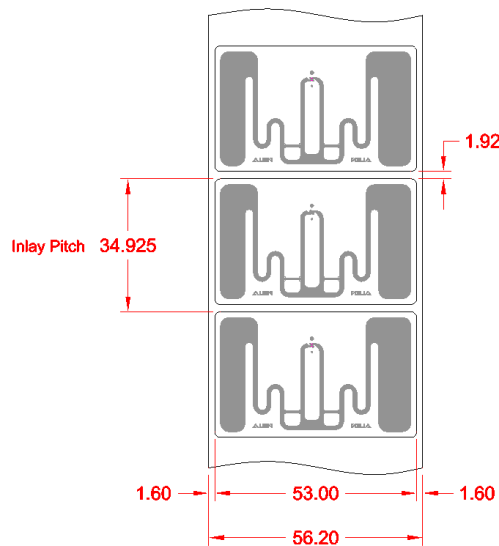
ALN-9828 Inlay Specification



ALN-9828-R (Dry Unslit Roll)



ALN-9828SR (Dry Slit Roll)



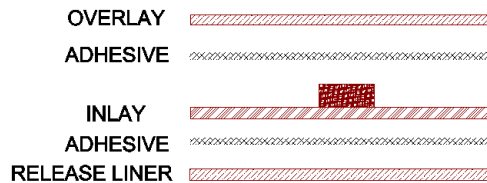
ALN-9828-WRW (White Wet Roll)



### ALN-9828 Inlay Stackup

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

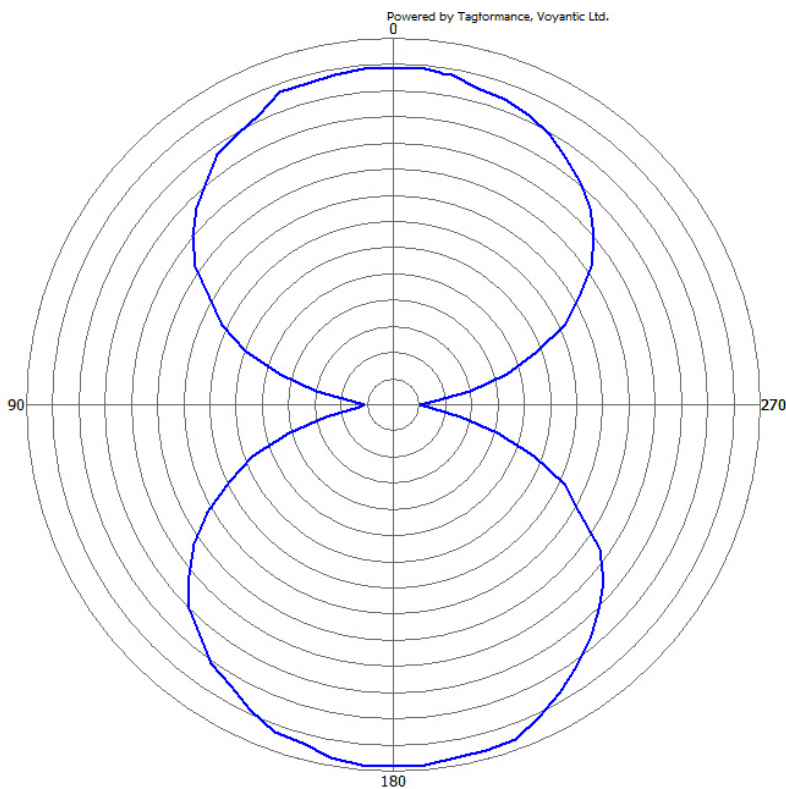
WHITE WET INLAY THICKNESS, ±10%	
OVER ANTENNA	0.16 mm
OVER CHIP	0.36 mm



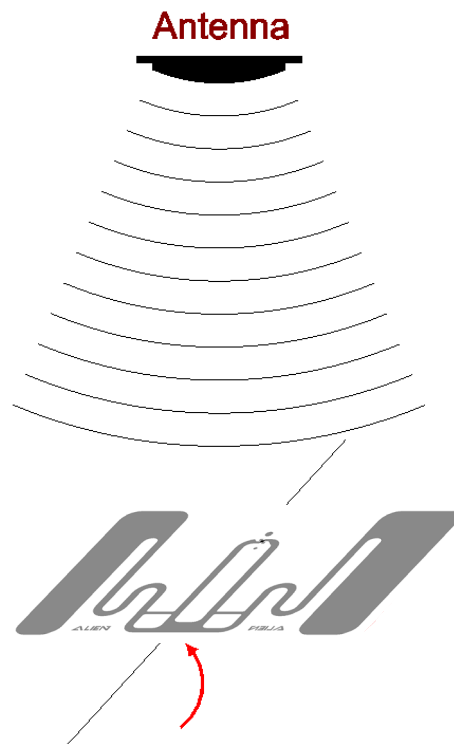
ALN-9828-R (Dry Unslit Roll) and  
ALN-9828SR (Dry Slit Roll)

ALN-9828-WRW  
(White Wet Roll)

### ALN-9828 Inlay Angular Sensitivity



Angular Sensitivity  
(Relative Read Range vs. Orientation)



Angular Sensitivity  
Inlay is rotated in the x, y, plane about the z axis



# ALIEN ALN-9828 "GT" Garment Tag Inlay

## ALN-9828 Specifications

Dry Inlay	Dry Unslit ALN-9828-R	Dry Slit ALN-9828SR	Environmental
Antenna Width	1.97" [50mm]	1.97" [50mm]	Shelf Life
Antenna Length	1.18" [30mm]	1.18" [30mm]	
Web Width	2.46" [62.5mm]	2.11" [53.5mm]	Recommended Storage
Web Pitch	1.375" [34.92mm]	1.375" [34.92mm]	
Core Width	2.46" [62.5mm]	2.11" [53.5mm]	Storage Limits
Core ID	6" [152.4mm]*		
Core Material	Fiberboard		Operating Limits
Inlays per Roll	12,500 Nominal	25,000 Nominal	
Maximum Roll OD	< 12" [304.8mm]		Bend Diameter
Roll Labeling Data	Roll #, Quantity		

Wet Inlay	White Wet ALN-9828-WRW
Inlay Width	2.09" [53.0mm]
Inlay Length	1.30" [33.0mm]
Web Width	2.21" [56.2mm]
Web Pitch	1.375" [34.92mm]
Core Width	2.21" [56.2mm]
Core ID	6" [152.4mm]*
Core Material	Fiberboard
Inlays per Roll	12,500 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	> +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

July 5, 2016

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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, 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, 6586744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

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RFID	
Protocols Supported	ISO/IEC 18000-6C EPCglobal 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	80 Bits
Access Password	32 Bits
Kill Password	32 Bits



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