



ALN-10040

SQUIGGLE INLAY (HIGGS™-10)

The Alien Technology® ALN-10040 Squiggle® is a high-performance, general-purpose RFID inlay for use in a wide variety of applications. Brings all the Higgs™-10 advantages to highly-regarded “Squiggle” Inlay.



Applications

- Volume Retail/Apparel
- Enterprise Wide Asset Management
- Warehouse Management
- Tracking Challenging Materials and Objects

FEATURE	DESCRIPTION	BENEFIT
One of the most widely-used general-purpose tags, now with an optimized memory footprint.	Well-proven design for a broad range of worldwide applications. Optimized 512bit memory footprint for volume and enterprise applications.	Robust, proven, and reliable. Designed to drive down the cost-of-ownership while increasing efficiencies of RFID solutions in large enterprises.
One of the best performing general-purpose tags on the market, now with next generation Higgs™-10 performance.	Optimized for high performance in all world regions. Higgs™-10 has Best-In-Class read (-22.5 dBm) and write (-19 dBm) sensitivity.	Trusted performance now even further enhanced, enabling more robust encoding and reading at larger ranges.
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. More robust memory for high-write applications.

Features:

- › Worldwide operation in all RFID UHF bands (860-960 MHz)
- › Global GS1 Class 1 Gen 2 (V1.2.0) and ISO/IEC 18000-6C compliance
- › Class leading read and write performance
- › 480 bits of NVRAM Memory
 - Up to 128 EPC bits (96-bits nominal)
 - Up to 32 User bits (with 96 bit EPC)
 - 48 bit Unique TID
 - 32 bit Access and 32 bit Kill passwords
- › User Memory may be Block Perma-Locked as well as read password protected
- › Low power operation for both read and write
- › *BlastWrite™* and *QuickWrite™* mass-encoding
- › Available in high-yield, high capacity dry/wet inlay rolls



Product Overview:

Powered by Alien®'s volume focused **Higgs™-10 UHF RFID IC** and innovative **Squiggle** antenna design, the ALN-10040 delivers industry leading EPC Gen 2 performance and reliability at a competitive price.

ALN-10040 inlays are *World Tag* compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.

With its Higgs™-10 core, the Squiggle delivers next generation performance and a rich feature set, yet is completely optimized for the highest volume enterprise, retail, and apparel applications.

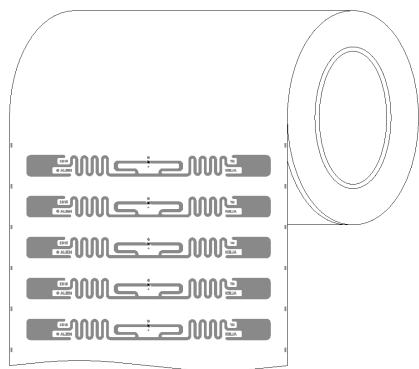
Enhanced memory footprint includes a **48-bit Unique TID for authentication and serialization applications and password protected read and write** support to prevent unauthorized viewing and modification of the tag's data.

Typical applications for the Squiggle include, but are not limited to, corrugate cases, pallet placards, apparel hang tags, baggage tags, shipping labels, asset management, and file folder labels.

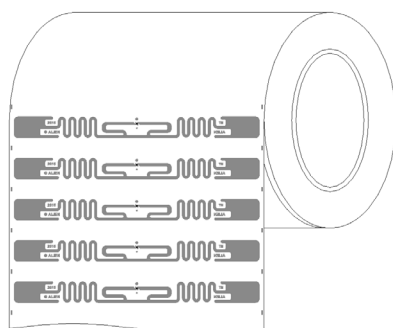


ALN 10040 Squiggle Inlay

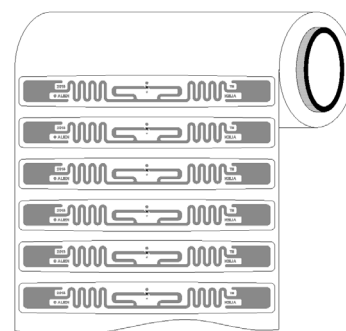
ALN-10040 Inlay Orientation



ALN-10040-R
(Dry Unslit Roll)



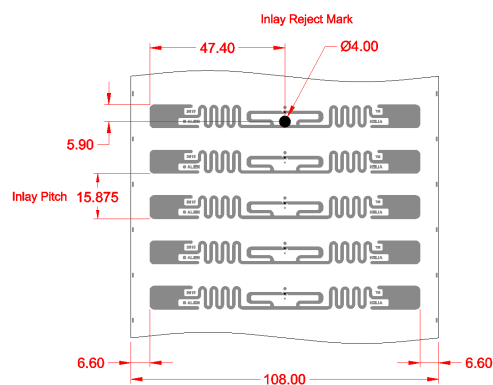
ALN-10040-SR
(Dry Slit Roll)



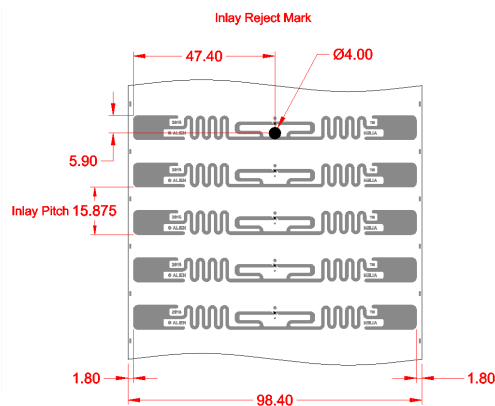
ALN-10040-WRC / -WRW
(Clear / White Wet Inlay)

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

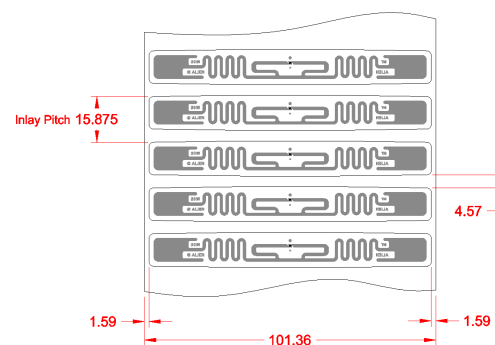
ALN-10040 Inlay Specification



ALN-10040-R
(Dry Unslit Roll)



ALN-10040-SR
(Dry Slit Roll)
Not yet available



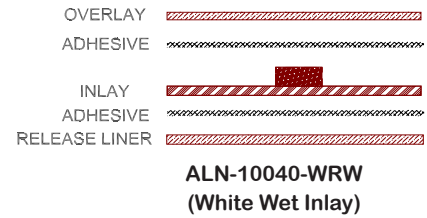
ALN-10040-WRC / -WRW
(Clear / White Wet Inlay)

ALN-10040 Inlay General Dimensions

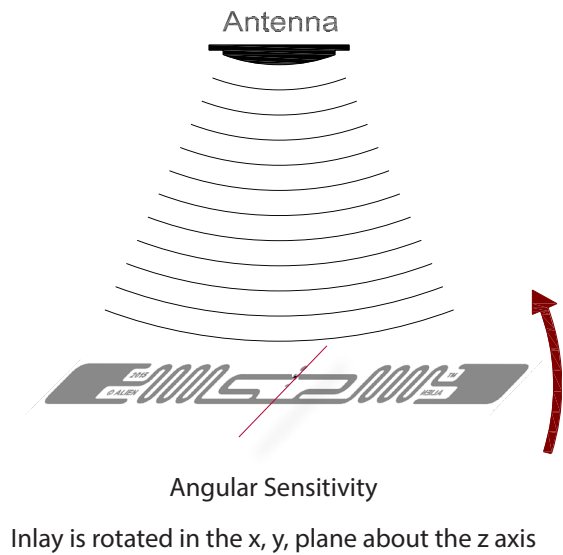
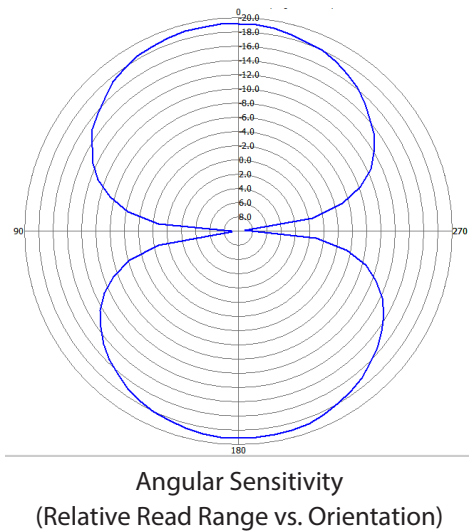
DRY INLAY THICKNESS $\pm 10\%$	
Over Antenna	0.06mm
Over Chip	0.24mm

CLEAR WET INLAY THICKNESS $\pm 10\%$	
Over Antenna	0.08mm
Over Chip	0.24mm

WHITE WET INLAY THICKNESS $\pm 10\%$	
Over Antenna	0.16mm
Over Chip	0.32mm



ALN-10040 Inlay Angular Sensitivity



ALN-10040 Specifications

Dry Inlay

Antenna Width	3.732" [94.8mm]
Antenna Length	0.319" [8.1mm]
Web Width (-R)	4.252" [108.0mm]
Web Width (-SR)	3.874" [98.4mm]
Web Pitch	0.625" [15.875mm]
Core Width (-R)	4.252" [108.0mm]
Core Width (-SR)	3.874" [98.4mm]
Core ID	6" [152.4mm]*
Core Material	Fiberboard
Inlays per Roll (-R)	20,000 Nominal
Inlays per Roll (-SR)	30,000 Nominal
Maximum Roll OD	< 12" [304.8mm]
Roll Labeling Data	Roll #, Quantity

Wet Inlay

Inlay Width	3.866" [98.2mm]
Inlay Length	0.484" [12.3mm]
Web Width	3.992" [101.4mm]
Web Pitch	0.625" [15.875mm]
Core Width	4.752" [120.7mm]
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 (-WRW)	TT Printable White Film Overlay
Overlay Adhesive (-WRW)	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	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	200,000 @ 25°C
RoHs	2002/95/EC (RoHS 1), 2011/65/EU (RoHS 2), 2015/863 (RoHS 10)
REACH	EU 143/2011, EU 125/2012, Annex XIV of EC no. 1907/2006
ESD Limit- HBM / CDM	5.0kV / 1.5kV

RFID

Protocols Supported	ISO/IEC 18000-6C EPCglobal Class 1 Gen 2
Integrated Circuit	Alien Higgs™-10
Operating Frequency	860-960 MHz
EPC Size	Up to 128 Bits
User Memory	32 Bits (w/96 Bit EPC)
TID	32 Bits
Unique TID	48 Bits
Access Password	32 Bits
Kill Password	32 Bits

April 5, 2018

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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, 6623599, 6606247, 6606079, 6590346, 6586338, 6568744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

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