



ALN-9835

“EXPRESS” RETAIL AND APPAREL INLAY

High performance in a right-size form factor, Alien Technology® ALN-9835 “Express” RFID inlay offers reliable reads for Retail/Apparel, Supply Chain & all on-the-move applications.



Applications

- Retail/Apparel
- Supply Chain
- General Asset Management
- Compact / High Performance

| FEATURE | DESCRIPTION | BENEFIT |
|---|--|--|
| Compact far-field design | 70x12.7mm size, compatible with all standard far-field RFID reader antennas (fixed and handheld) | Seamless operation with currently deployed RFID hardware |
| Robust performance in mid-size form factor | Similar antenna architecture to larger Squiggle™ family inlays | For applications where robust performance is required, but not enough space for larger inlay |
| Reliable read / write performance with Sentinel™ memory | Bit error correction, improved read/write sensitivity, robust memory retention and 200,000 write cycles (2X that of competition) | Robust reliability of stored data & added protection against data loss/corruption |

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
- › 512 bits of NVRAM Memory
 - Up to 128 EPC bits (96-bits nominal)
 - 128 User bits
 - 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 in 32 bit blocks
- › Low power operation for both read and write
- › *BlastWrite™* and *QuickWrite™* mass-encoding
- › Dynamic Authentication™ - anti-cloning/anti-counterfeit technology
- › Available in high-yield, high capacity dry/wet inlay rolls



Product Overview:

Designed for mid-size Retail, Apparel, General Asset Management & Supply Chain applications, the 70x12.7mm **Higgs™-EC UHF RFID IC** based “Express” antenna design offers robust performance in a right-size antenna design.

Applications include (but not limited to):

- Apparel / Retail labeling
- General enterprise asset management
- Supply chain management
- Applications requiring robust readability in smaller size

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.

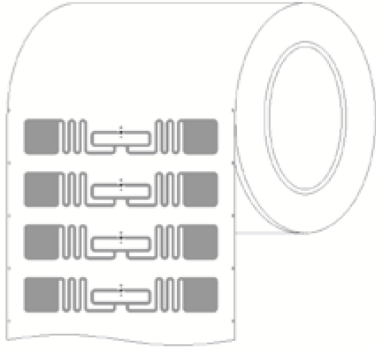
ALN-9835 inlays are World Tag compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.



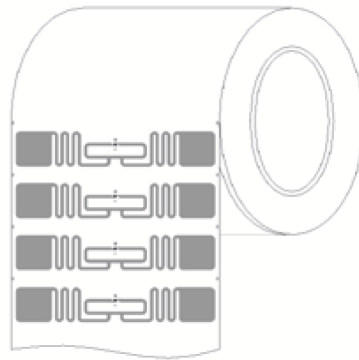
ALN-9835 "Express" Inlay

All dimensions in millimeters unless otherwise specified

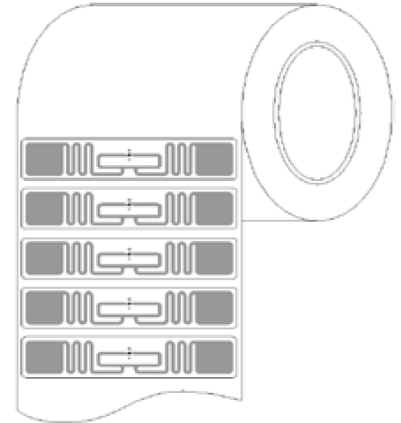
ALN-9835 Inlay Orientation



ALN-9835-R
(Dry Unslit Roll)



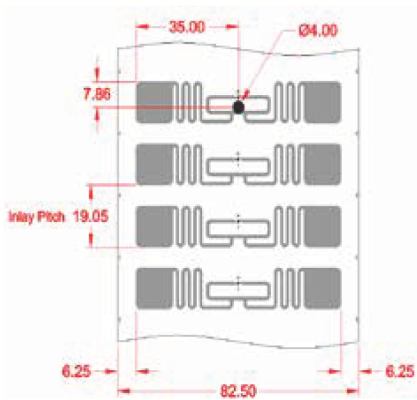
ALN-9835-SR
(Dry Slit Roll)



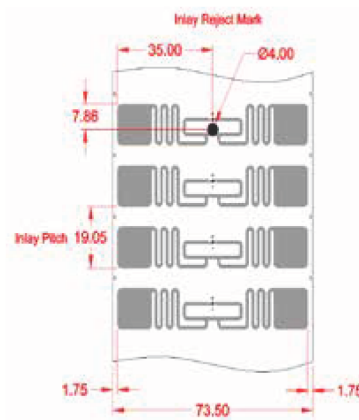
ALN-9835-WRW
(White Wet Inlay)

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

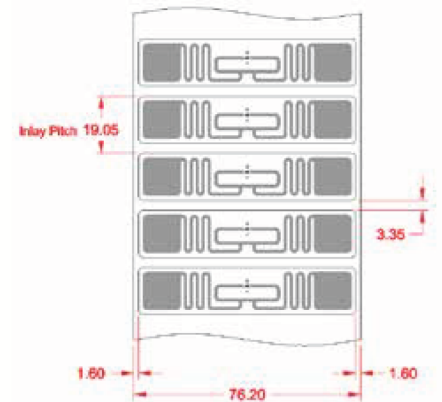
ALN-9835 Inlay Specification



ALN-9835-R
(Dry Unslit Roll)



ALN-9835-SR
(Dry Slit Roll)

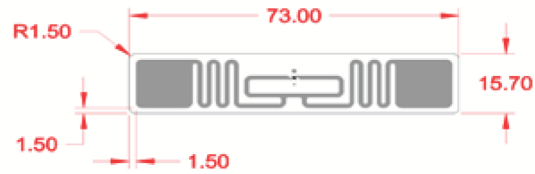
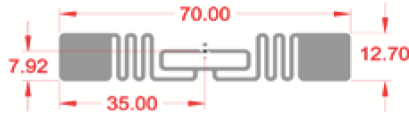


ALN-9835-WRW
(White Wet Inlay)





ALN-9835 General Dimensions

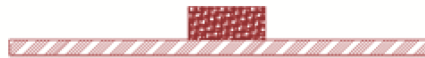


ALN-9835 Inlay Stackup

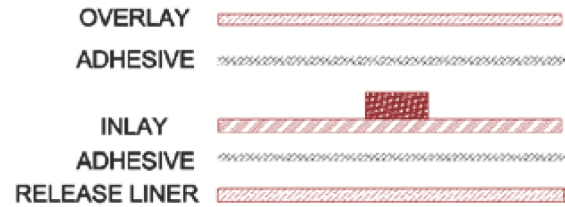
| DRY INLAY THICKNESS $\pm 10\%$ | |
|--------------------------------|--------|
| Over Antenna | 0.06mm |
| Over Chip | 0.24mm |

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

INLAY

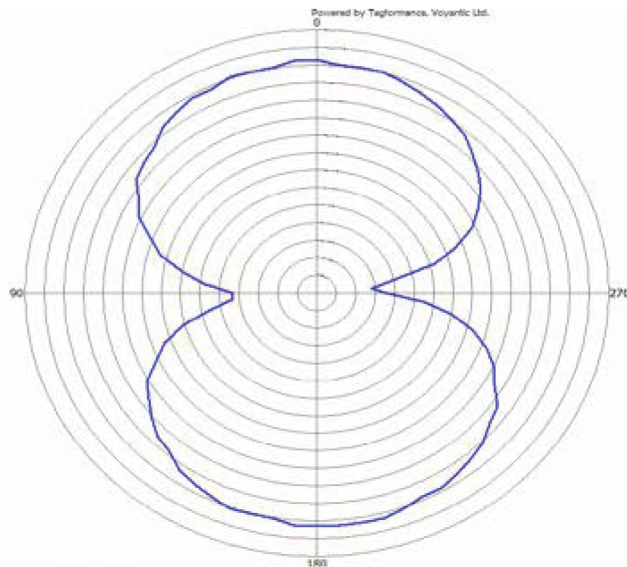


ALN-9835-R
(Dry Unslit Inlay)

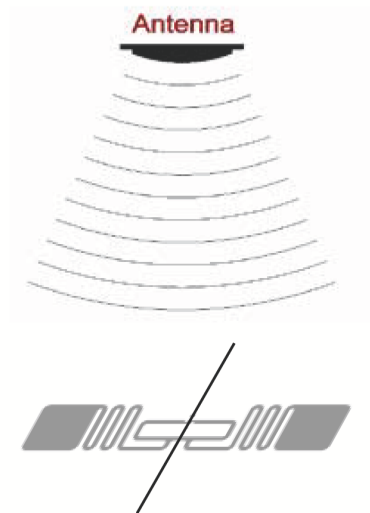


ALN-9835-WRW
(White Wet Inlay)

ALN-9835 Inlay Angular Sensitivity



Angular Sensitivity
(Relative Read Range vs. Orientation)



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

ALN-9835 Specifications

Dry Inlay

| | |
|-----------------------|------------------|
| Antenna Width | 2.576" [70mm] |
| Antenna Length | 0.500" [12.7mm] |
| Web Width (-R) | 3.248" [82.50mm] |
| Web Width (-SR) | 2.894" [73.50mm] |
| Web Pitch | 0.750" [19.05mm] |
| Core Width (-R) | 3.248" [82.50mm] |
| Core Width (-SR) | 2.894" [73.50mm] |
| Core ID | 6" [152.4mm]* |
| Core Material | Fiberboard |
| Inlays per Roll (-SR) | 25,500 Nominal |
| Inlays per Roll (-R) | 17,000 Nominal |

Wet Inlay

| | |
|----------------------------------|------------------------------------|
| Inlay Width | 2.874" [73mm] |
| Inlay Length | 0.618" [15.7mm] |
| Web Width | 3.000" [76.20mm] |
| Web Pitch | 0.750" [19.05mm] |
| Core Width | 3.000" [76.20mm] |
| Core ID | 6" [152.4mm]* |
| Core Material | Fiberboard |
| Inlays per Roll | 17,000 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

October 11, 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, 7542006, 7531218, 7522055, 7506010, 7489248, 7453705, 7425467, 7417306, 7411503, 7385284, 7377445, 7364084, 7353598, 7342490, 7324061, 7321159, 7301458, 7295114, 7288432, 7265675, 7262886, 7260882, 7253735, 7244326, 7218527, 7214569, 7199527, 7193598, 7173538, 7172910, 7172809, 7141176, 7113259, 7101502, 7080444, 7070851, 7068224, 7046328, 6996644, 6988667, 6983361, 6980184, 6970219, 6952157, 6942155, 6933848, 6927085, 6816380, 6780696, 6731353, 6693384, 6683663, 6665044, 6657289, 6623579, 6606247, 6606079, 6590348, 6586338, 6586744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

This product is licensed under patents of Round Rock Research, LLC, for use solely with UHF RFID Readers (such as Alien reader products) that are licensed under an agreement with Round Rock Research, LLC.

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 -13°F to 122°F [-25°C to +50°C] 20% to 90% RH Non-condensing |
| Storage Limits | -40°F to +158°F [-40°C to +70°C] 20% to 90% RH Non-condensing |
| Operating Limits | > 1.97" [50mm] |
| Bend Diameter | < 5N/mm ² |
| Pressure | Per ASTM D5276 |
| Drop Resistance | 200,000 @ 25°C |
| Write Cycles | 2002/95/EC (RoHS 1), 2011/65/EU (RoHS 2), 2015/863 (RoHS 10) |
| RoHs | EU 143/2011, EU 125/2012, Annex XIV of EC no. 1907/2006 |
| REACH | ESD Limit- HBM / CDM 5.0kV / 1.5kV |

RFID

| | |
|---------------------|---------------------------------------|
| Protocols Supported | ISO/IEC 18000-6C GS1 Class 1 Gen 2 |
| Integrated Circuit | Alien Higgs™-EC |
| Operating Frequency | 840–960 MHz |
| EPC Size | 128 Bits |
| User Memory | 128 Bits |
| TID | 32 Bits |
| Unique TID | 48 Bits |
| Access Password | 32 Bits |
| Kill Password | 32 Bits |