

Ready for the most challenging of Retail applications, the Higgs-10 based ALN-10020 “HiScan” is an Auburn approved 42x16 RFID inlay especially suited for handheld and lower-power reader applications.



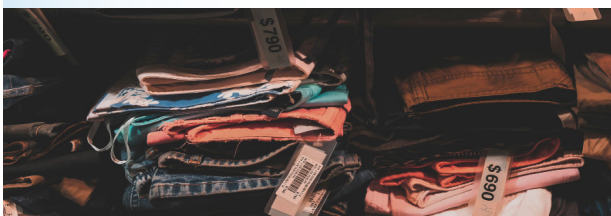
### Applications

- Retail
- Apparel
- Handheld RFID readers
- Smaller-size applications

FEATURE	DESCRIPTION	BENEFIT
Performance tuned for low-power reading environments	Next generation Higgs-10 IC enables responsive performance in dense retail applications when using handheld and lower-power RFID readers	Practical read results in every day retail environments (e.g. tagged assets closely packed, rapid handheld movement etc.)
Auburn™ retail category Compliance	Meets Auburn A, B, D, M, G, Q Retail categories	Ensures consistent performance for all retail-type use-cases
Reliable read / write performance with Sentinel™ memory	Detects and fixes single bit errors and flags dual bit errors with 200K write cycles & 50 year memory retention	Safeguarded data and immunity to typical sources of single bit errors (chip damage, low power etc.)

### 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:

Designed for Retail & Apparel applications (especially when used with a handheld RFID reader), the 42x16 mm Higgs™-10 UHF RFID IC based “HiScan” antenna design offers robust performance for high volume Enterprise, Retail and smaller-size asset applications.

Applications include (but not limited to):

- Small retail product labeling
- Apparel hang-tags
- Applications requiring extra high sensitivity

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.

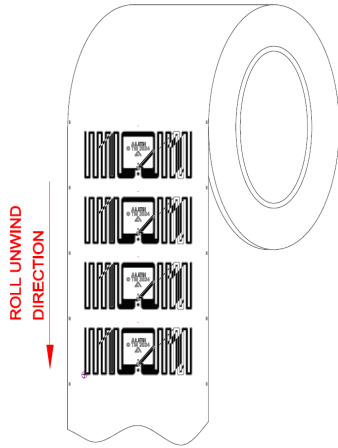
ALN-10020 inlays are World Tag compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.



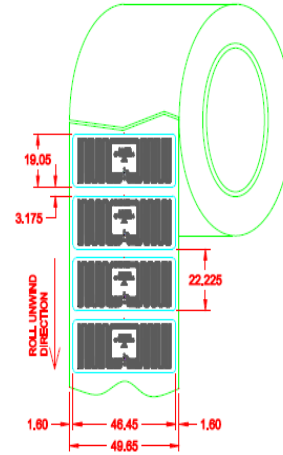
## ALN-10020 “HiScan” Inlay

All dimensions in millimeters unless otherwise specified

### ALN-10020 Inlay Orientation



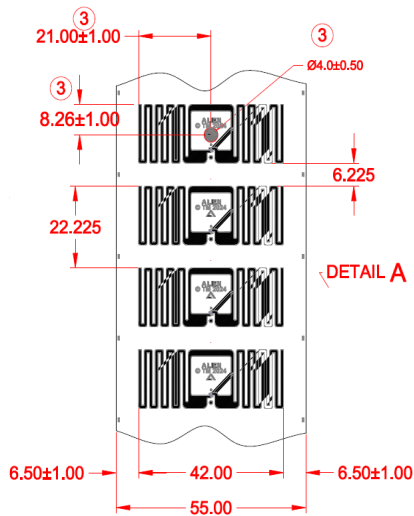
ALN-10020-R  
(Dry Unslit Roll)



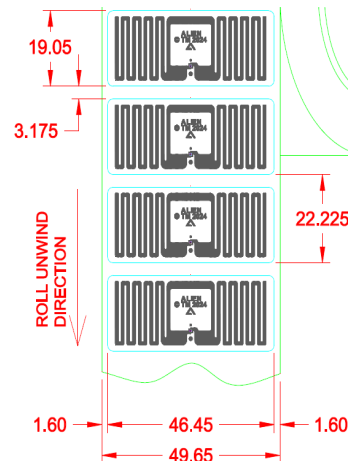
ALN-10020-WRW.WRC  
(White Wet / Clear Wet Inlay)

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

### ALN-10020 Inlay Specification



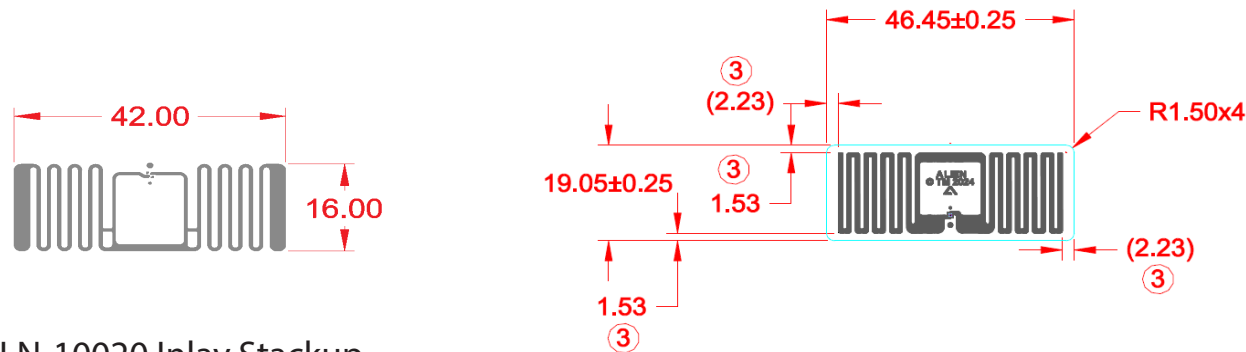
ALN-10020-R  
(Dry Unslit Roll)



ALN-10020-WRW  
(White Wet Inlay)



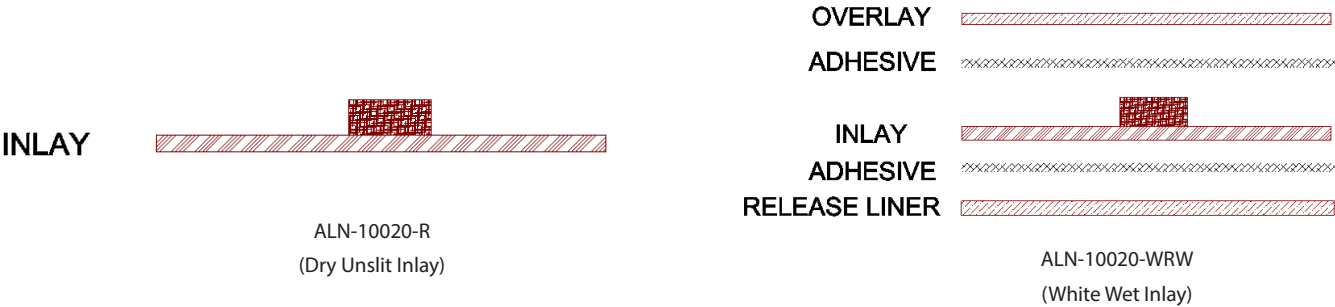
ALN-10020 General Dimensions



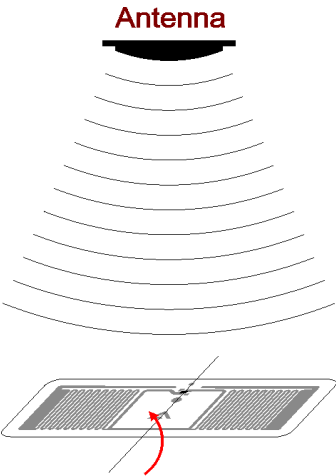
ALN-10020 Inlay Stackup

DRY INLAY THICKNESS ±10%	
Over Antenna	0.06mm
Over Chip	0.24mm

WHITE WET INLAY THICKNESS ±10%	
Over Antenna	0.16mm
Over Chip	0.32mm



ALN-10020 Inlay Angular Sensitivity & Performance



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

## ALN-10020 Specifications

### Dry Inlay

Antenna Width	1.653" [42mm]
Antenna Length	0.629" [16mm]
Web Width (-R)	2.090" [53.00mm]
Web Width (-SR)	1.71.0" [43.50mm]
Web Pitch	0.880" [22.23mm]
Core Width (-R)	2.090" [53.00mm]
Core Width (-SR)	1.71.0" [43.50mm]
Core ID	6" [152.4mm]*
Core Material	Fiberboard
Inlays per Roll (-SR)	12,500 +/- 500
Inlays per Roll (-R)	12,500 +/- 500
	(Note : 2 Rolls per Box)
Maximum Roll OD	< 12" [304.8mm]
Roll Labeling Data	Roll #, Quantity

### Wet Inlay

Inlay Width	1.772" [45.00mm]
Inlay Length	0.748" [19.00mm]
Web Width	1.880" [47.65mm]
Web Pitch	0.880" [22.23mm]
Core Width	1.880" [47.65mm]
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

### Environmental

	Dry Inlays: 5 years at +77°F [+25°C] @ 40% RH
Shelf Life	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 <sup>2</sup>
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 GS1 Class 1 Gen 2
Integrated Circuit	Alien Higgs™-10
Operating Frequency	840–960 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

\* Shipped with 6" to 3" plastic core adapter

January 27, 2020 DRAFT DATA SHEET - DRAWINGS / DIMS NOT FINAL

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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, 7262086, 7260882, 7253735, 7244326, 7218527, 7214569, 7199527, 7193504, 7173528, 7172910, 7172789, 7141176, 7113250, 7101502, 7080444, 7070851, 7068224, 7046328, 6998644, 6988467, 6985361, 6980184, 6970219, 6952157, 6942155, 6933848, 6927085, 6816380, 6780696, 6731353, 6693384, 6683663, 6665044, 6657289, 6623579, 6606247, 6606079, 6590346, 6586338, 6566744, 6555408, 6527964, 6479395, 6468638, 6420266, 6316278, 6291806, 6281038. Other patents pending.

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