



Alien ALN 9713 UHF RFID TAG

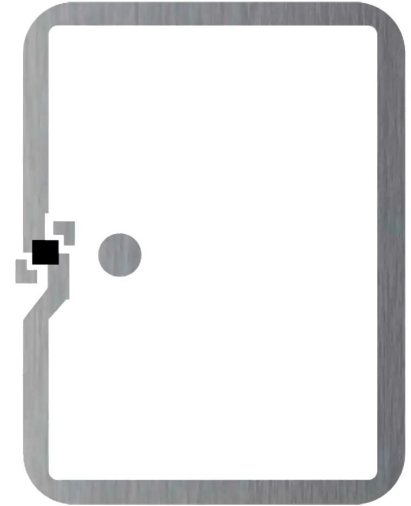
Model: ALN-9713

> Applications

- 1 Jewelry Tags
- 2 Pharmaceutical vials
- 3 Bottles
- 4 Syringes
- 5 Blister packs
- 6 Liquids
- 7 Food product packaging
- 8 Software/video DVD's

> Features

- 1 Designed to meet EPCglobal Gen2 (V 1.2.0) and ISO/IEC 18000-6C
- 2 Worldwide operation in the RFID UHF bands (840-960 MHz)
- 3 448-Bits of NVRAM Memory
 - 128-EPC Bits
 - 128 User Bits
 - 64 Bit Unique TID
 - 32 Bit Access and 32 bit Kill Passwords
- 4 Pre-programmed with a unique, unalterable 64-bit serial number (ideal for authentication)
- 5 User Memory can be Block Perma-Locked as well as read password protected in 32 Bit Blocks
- 6 Class leading read and write performance
- 7 Pre-encoded Multivendor Chip Serialization (MCS)
- 8 BlastWrite™ and QuickWrite™ mass-encoding
- 9 Dynamic Authentication™ - anti-cloning/anti-counterfeit technology
- 10 Available in high-yield, high capacity dry/wet inlay rolls



> Descriptions

Powered by Alien's break-through Higgs TM 4 UHF RFID IC, the "SIT" is a near-field (aka magnetic or inductive) coupled antenna design, the ALN-9713 delivers industry leading EPC Gen 2 performance and reliability in an ultra compact form factor.

The "SIT" is especially well-suited for very small item-level applications where geometries are critical. The near-field coupling properties make this tag ideal where read range requirements are short or for applications on aqueous materials.

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-9713 Specifications

Dry Inlay

Antenna Width	0.472 [12.0 mm]
Antenna Length	0.354 [9.0 mm]
Web Width	1.3 [33.0 mm]
Web Pitch	0.625 [15.9 mm]
Core Width	1.30 [33.0 mm]
Core ID	6 [152.4 mm]*
Core Material	Fiberboard
Inlays per Roll	20,000 Nominal
Maximum Roll OD	< 12 [304.8 mm]
Roll Labeling Data	Roll #, Quantity

Wet Inlay

Inlay Width	0.75 [19.0 mm]
Inlay Length	0.5 [12.7 mm]
Web Width	1.3 [33.0 mm]
Web Pitch	0.625 [15.9 mm]
Core Width	1.3 [33.0 mm]
Core ID	6 [152.4 mm]*
Core Material	Fiberboard
Inlays per Roll	20,000 Nominal
Maximum Roll OD	< 16.0 [406.4 mm]
Roll Labeling Data	Roll #, Quantity
White	TT Printable White Film Overlay
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

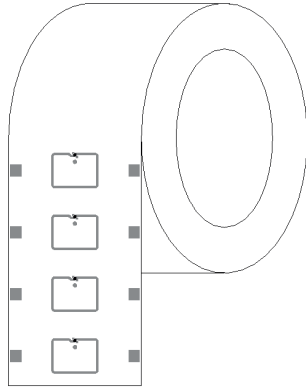
RFID

Protocols Supported	ISO/IEC 18000-6C 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

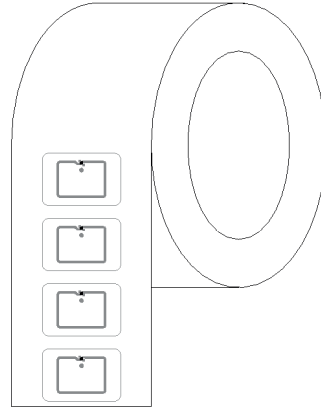
Enviromental

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] 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 [50 mm]
Pressure	< 5N/mm
Drop Resistance	Per ASTM D5276
Write Cycles	100,000 @ 25°C
ROHs	2002/95/EC, 2005/618/EC, 2011/65/EU Compliant
REACH	1907/2006/EC Compliant (SVHC and ECHA)
ESD Limit HBM / CDM	5.0kV / 1.5kV

> ALN-9713 Inlay Orientation



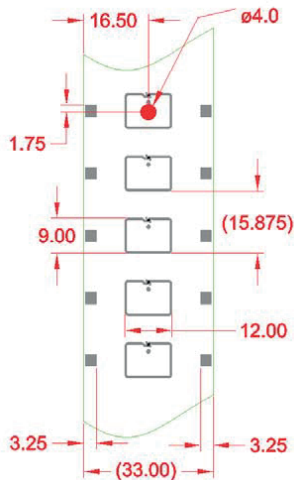
ALN-9713-R
(Dry Unslit Roll)



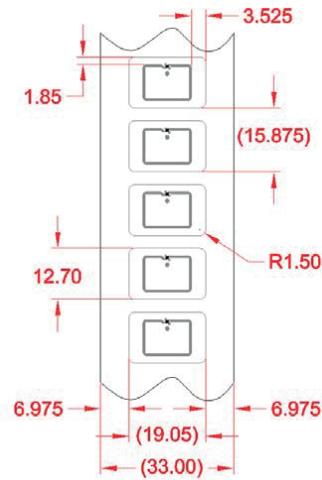
ALN-9713-WRW
(White Wet Roll)

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

> ALN-9713 Inlay Specification



ALN-9713-R
(Dry Unslit Roll)



ALN-9713-WRW
(White Wet Roll)

> ALN-9713 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

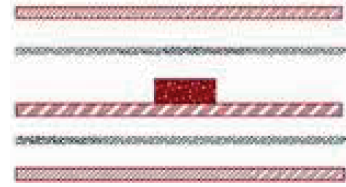
INLAY



ALN-9662-FRA / FSRA
(Dry Unslit / Slit Inlay)

OVERLAY
ADHESIVE

INLAY
ADHESIVE
RELEASE LINER



ALN-9662-FWRWA
(White Wet Inlay)

> ALN-9713 Inlay Angular Sensitivity

The radiation pattern of the SIT is very dependent on the metallic objects that are in close proximity of the tag. By itself the SIT does not have a classical radiation pattern. Coupling to the SIT is extremely dependent on the near-field reader antenna used. Since the coupling is mostly magnetic or inductive one can think of the SIT as a classical coil with one turn. Thus it will couple very well to other coils of similar dimensions.



Syringes



Pharmaceutical vials



Jewelry Tags



Food product packaging