



Features

Patented inlay design obtains excellent read range regardless of surface – metal, plastic, even wood
Impact-resistant housing protects RFID inlay from harmful UV rays
Ultrasonically welded seal protects RFID inlay from caustics/acids
Affixing methods include mechanical fasteners (standard) and/or adhesive (optional)
Compatible with RFID Tracking Software

Product Print Options

Barcode . Data Matrix . QR Code . RFID . Serial Number . Text

Product Functionality

Abrasion Resistance . Chemical Resistance . Heat Resistance . UV/Outdoor Durability

Popular Applications

Government . Inventory . Marine . Oil & Gas . Supply Chain . Transportation / Logistics . Utilities . Warehouse / Distribution Centers . Manufacturing

Category

Manufacturing - RFID . Warehouse - RFID . Asset Tracking - RFID . RFID Tags . RFID for Metal Surfaces

An RFID tag that truly lives up to its name. The Universal RFID Hard Tag features surface-independent tags with a patented inlay design used to obtain excellent read ranges regardless of the surface – metal, plastic, even wood. Along with the [Universal RFID Asset Tag](#), the [Universal Mini RFID Tag](#), [Universal Micro RFID Tag](#) and the [Universal MC RFID Tag](#), these products make up a revolutionary product line that allows you to use only one RFID tag for your asset tracking application.

The Universal RFID Hard Tag features impact-resistant housing combined with an ultrasonically welded seal that protects the subsurface printed label and RFID inlay from harsh environments including harmful UV rays. This durable product also withstands heavy impact and will read after resurfacing from submersion in over 20 ft of water. The housing comes standard with two holes for mechanical fasteners; however, permanent, pressure-sensitive adhesive is also available as an optional affixing method.

Unlike other RFID hard tags on the market, the Universal RFID Hard Tag's clear housing allows customers to see the customized label inside. Our four-color processing capabilities allow you to promote your company with a label that shows off your company name or logo. Our digital printing process ensures even the most detailed logo will look crisp and clean.

Potential Applications for Universal RFID Hard Tags

Asset Tracking – the barcode and human readable ID number on Universal RFID Hard Tag can be used to track information about the metal asset the RFID tag is adhered to, i.e., laptops, furniture, containers, equipment and more.

Work-in-Process – the barcode and/or identification number on Universal RFID Hard Tag can identify a “batch” OR “lot” of product or just simply identify each product as it travels through the production process.

Specifications Data

Universal hard tag product information

Material	.002" thick polyester; .20" total product thickness
Serialization	Barcode and human-readable equivalent is digitally printed – providing excellent clarity and easy scanning. Code 39 is the standard symbology with a range of 2.7 to 9.4 CPI (characters per inch). Optional linear and 2D symbologies available. Although this product is primarily marketed as a bar code product, we can produce it with human-readable numbers only or unserialized.
Label Copy	The label copy may include block type, stylized type, logos or other designs
Colors	Standard colors include black, red, yellow, green, dark blue, orange, purple or blue. Custom spot colors are also available at no additional charge. Due to contrast needed for the bar code scanner, all bar codes are black.
Standard Adhesive	High performance adhesive
Frequency Range	Custom designed UHF inlay uses Alien Higgs 3 chip optimized for use at 915 MHz. (UHF, Class I Gen 2)
Sizes	4.125" x 1.75"
Packaging	Shipped in "work-out-of" cartons for convenient application.

Chemical Testing

In all cases, after 3 weeks soaking in these chemicals, all the tags and labels responded properly when interrogated with a handheld RFID reader, and all the bar codes except those soaked in acetone were readable with a standard bar code reader. NOTE: Samples tested with adhesive.

Chemical Test Data

Length of immersion	Water	Glass Cleaner	Bathroom Cleaner pH 10.0	Isop. alcohol 99%	Acetone 1005	NaOH Ph 12.0	HCl pH 1.0	Brake fluid
2 hours	no effect	no effect	no effect	no effect	Surface of housing slightly cloudy	no effect	no effect	no effect
24 hours	no effect	no effect	no effect	no effect	Plastic housing softened, but RFID tag still readable	no effect	no effect	no effect
1 week	no effect	no effect	no effect	P.S. adhesive softened	Plastic housing brittle, opaque, but RFID tags still readable	no effect	no effect	no effect
3 weeks	no effect	no effect	no effect	P.S. adhesive softened	Plastic housing softened, but RFID tag still readable	no effect	no effect	no effect

Destructive Testing

Destructive Test Data

Temperature Testing

Heat Testing - Product withstood temperatures up to 240°F (115°C) for short term (10 minute) periods. They will withstand temperatures up to 160°F (71°C) for extended periods (tested for six hours with no degradation). The tests demonstrated that when the transponder was not readable at temperatures above 185°F (85°C), but resumed function when temperatures were once again reduced below 185°F (85°C). Cold Testing - Tags were tested outdoors at 0°F and were readable, but read distance was reduced to half of the read distance observed at 60°F (15°C).

Temperature Test Data

Read Range Testing

In many cases the tags read intermittently for longer distances than those indicated, however, the results reported below were for continuously responding reads.

Read Range Test Data

Device used	Test results (all at 30 dBm)			
	Metal	Plastic	Cardboard	Wood
Handheld convergence CS-101				
Universal RFID Hard Tag	10 feet	5 feet	5 feet	5 feet

Barcode Readability Testing

Barcode Readability Test Data

Abrasion Testing

Abrasion Test Data

Label Adhesion Testing

Label Adhesion Test Data

Pull Testing

Pull Test Data
