

# AD Maxdura<sup>®</sup> Tire Tag

## Overview

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**Frequency Band (Operation Frequency)**

860 – 960 MHz

Typical min. 4 meters vulcanized in tire,  
depending on embedding position

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**Chip**

Impinj M730 / Higgs 9

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**Hard Tag Dimensions**

43 x 1.5 mm (+/- 0.5 mm) /  
1.693 x 0.059 in

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**International Standard**

Compliant to GS1 Class 1 Gen 2 V2  
and ISO 18000-6C

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**Industry Segments**

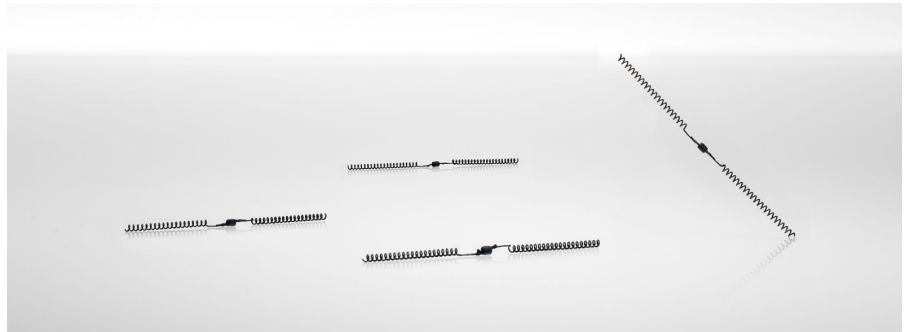
Automotive  
Industrial Applications

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**Applications**

Automotive Tire Tagging  
Inventory and Logistics  
Item Level Inventory Accuracy  
Supply Chain Management  
Warehouse Management

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## Robust tire tag is embedded for life

An embedded UHF tire tag is intended to be integrated into the tire mold prior to the manufacture and curing of the tire. It is attached to the tire directly, during tire vulcanization, so that it can be fully connected to the core of the tire and function correctly to track the tire. The use of an embedded tire tag controls the complete lifecycle of the tire from production to recycling (environment control). It supports maintenance recording, inventory tracking and fleet management, and facilitates several additional different business models. Being exposed to harsh environmental conditions during the manufacturing process as well as on the road, an RFID tire tag needs to be robust. Avery Dennison Smartrac's AD Maxdura<sup>®</sup> Tire Tag uses an automatic overmolding and resistance welding method to ensure highly durable and uniform antenna connections.

Typically, the IC module of common tire tag products is a small printed circuit board larger than the diameter of the spring antenna. However, tire manufacturers nowadays require much smaller dimensions to maximize homogeneity within the tire composites. To reduce overall dimensions, the AD Maxdura<sup>®</sup> Tire Tag is built up with a customized IC housing based on lead frame technology.

One of the most challenging issues is the adjustment of the antenna's resonance frequency when the tag is embedded inside the tire. As every customer uses its own specific rubber compound, the antenna length needs to be tailored to the specific material properties. As one of the leading automotive suppliers of RFID solutions, we have more than 20 years' experience in the field. We have leveraged our strong experience in designing RFID products for the world's largest car manufacturers to develop the AD Maxdura<sup>®</sup> Tire Tag.

## Technical features

Chip	Impinj M730	Higgs 9
EPC and User Memory	128-bit and 0-bit	Up to 496-bit of EPC and up to 688 user bit
TID Memory	96-bits of serialized TID with 48-bit serial number, 32-bit shared access and 32-bit shared kill password	48-bit unique TID, 32-bit access, 32-bit kill password
Product Code	510050	510045
Air Interface Protocol	Compliant to GS1 Class 1, Gen 2 and ISO 18000-6C	ISO/IEC 18000-63:2015 and EPC Global Gen2 v2 Compliant
Operation Frequency	860 - 960 MHz (@23 °C +/-5 °C) / @73.4 °F, 41 / 23 °F	860 - 960 MHz (@23 °C +/-5 °C) / @73.4 °F, 41 / 23 °F
ESD	ESD 61000-4-2, Level 1	ESD 61000-4-2, Level 1
Hard Tag Dimension	43 x 1.5 mm (+/-0.5 mm) / 1.693 x 0.059 in	43 x 1.5 mm (+/-0.5 mm) / 1.693 x 0.059 in
Thickness Diameter	1.5 mm (+/- 0.2 mm) / 0.059 in	1.5 mm (+/- 0.2 mm) / 0.059 in
Housing Material	Epoxy	Epoxy
Color	Black	Black
Weight	Less than 2 gram	Less than 2 gram
Operating Temperature	-30 °C to 85 °C / -22 °F to 185 °F	-30 °C to 85 °C / -22 °F to 185 °F
Storage Temperature	-40 °C to 120 °C / -40 °F to 248°F Typical storage temp. 25 °C / 77 °F	-40 °C to 120 °C / -40 °F to 248°F Typical storage temp. 25 °C / 77 °F
Cold Temperature Test	-40 °C (40 °F), 24 hours	-40 °C (40 °F), 24 hours
High Temperature Test	120 °C (248 °F), 24 hours	120 °C (248 °F), 24 hours
Vulcanization Temperature	200 °C (392 °F), 30 mins, up to 5 MPa pressure, 2 cycles	
Certificates	ISO 9001 / ISO 14001 / IATF 16949 / ISO 18000-6C / ISO 20909 / ISO 20910 / ISO 20911 / ISO 20912	

### Contact information

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**Warranty:** Please refer to Avery Dennison standard terms and conditions: [rfid.averydennison.com/termsandconditions](https://www.averydennison.com/termsandconditions)

**Care and handling:** RFID inlays are sensitive to ESD. Observe standard industry practices relating to electronics / RFID to keep environmental impact and static charge to a minimum.

**Applications:** This product should be tested by the customer / user thoroughly under end use conditions to ensure the product meets the particular requirements. Avery Dennison does not represent that this product is fit for any particular purpose or use. Avery Dennison reserves the right to modify, change, supplement or discontinue product offerings at any time without notice. The information contained herein is believed to be reliable but Avery Dennison makes no representation concerning the accuracy or correctness of the data.

