SMARTRAC
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SENSOR TADPOLE

Water Leakage Tag

SMARTRAC has complemented its passive sensor inlay & tag offering with a new, state-of-the-art sensor inlay for automotive industry applications in car manufacturing lines. It is designed to measure moisture condition changes within a car body, to detect any water ingress into the vehicle during final quality control checks.

The SMARTRAC SENSOR TADPOLE is a passive UHF inlay equipped with RFMicron's Magnus®S2 Integrated Circuit (IC). This RFID sensor inlay offers excellent, stable performance on any difficult surface material, and is able to accurately pinpoint the location of water leakage inside the car body. The customized antenna design acts as a resistor/inductor/capacitor (RLC) tuned circuit to enable an antenna to sense its environment. The tag's antenna converts environmental data into an impedance change, and then the sensor tag IC translates this into a sensor code, as it dynamically matches antenna impedance to die impedance.

Optionally, the antenna can be extended with a paper tail to recognize small water quantities from a wider area where RF signals cannot easily penetrate. The paper tail absorbs water and transfers moisture level information via capillary action to the tag.

This advanced SENSOR TADPOLE is a small and thin UHF tag that offers cost efficiency, is easy to implement, and works on difficult surfaces, like metal parts in the chassis. Delivery format is as a singulated wet inlay with the option of two different tail lengths. It can be delivered with TID list and sensor code values for increased accuracy and complementary data analysis, in conjunction with the SMART COSMOS Cloud Services platform.

SENSOR TADPOLE suits all converting-industry needs, and the inlay complies with all relevant industry standards and strict quality control parameters.

Overview

Operating Frequency
900-930 MHz (FCC band)

Integrated Circuit (IC)
RFMicron Magnus®S2

Product Size: (L x W x H)
21.5 x 84.0 x 2.4 mm /
0.8 x 3.3 x 0.1 in

International Standards

- EPC Class 1 Gen 2 v.2.0.0
  ISO 18000-6C

Application Areas

- Automotive industry
- Construction industry
- Liquid packaging
- ... and many more.

BEST NEW PRODUCT
RFID JOURNAL AWARDS
2016 WINNER

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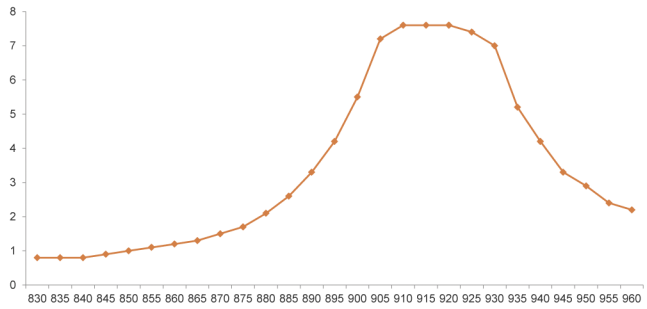
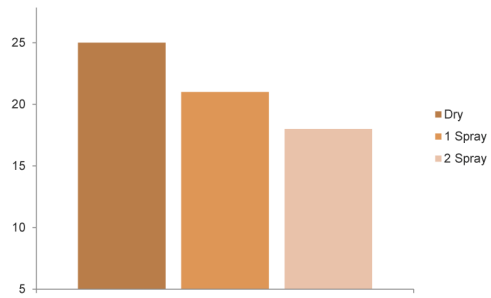
Technical Features	
IC	RFMicron Magnus®S2
Memory	128 bit EPC + 144 bit user memory
Frequency	900-930 MHz (FCC band)
Product Size: (L x W x H)	21.5 x 84.0 x 2.4 mm / 0.8 x 3.3 x 0.1 in
Tail Options	Option one: Tail is starting from the end of the tag Option two: Tail is going across the top of the tag
Operating Temperature	-40 °C to +85 °C / -40 °F to +185 °F
Delivery Format	White wet singulated, optional with tail
Adhesive	RA-2
Shelf Life	+20 °C, 50 % RH / 68 °F, 50 % RH - minimum 2 years from the date of manufacturing

Theoretical Read Range on Metal (m)



Sensor Code Value on Metal (FCC band)



All the graphs are indicative: performance in real life applications may vary. The data has been determined based on calculations for transmitters with a 2W ERP output power level.

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