

HARTING Mitronics

RFID tags for industrial and logistic applications



# Passive and robust UHF RFID transponders for industrial and logistic applications



## **Key Advantages of RFID Systems – Focus UHF**

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- Definitive identification of individual objects
- Automatic identification without "Line-of-Sight"
- "Read & Write" of individual information about an object
- Bulk recognition

# RFID tags for industrial and logistic applications

#### Advantages of UHF 868 MHz:

- High read & write ranges
- Recognition of up to 200 tags per second
- Identification at speeds up to 100km/h
- EPC C1 Gen2 Standard
- Worldwide Coordination



## **Fields of Applications**

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- Production Process
  - Product Tracking
  - Stock Management
- Automated Assembly Lines
  - Process Control
  - Quality Management
- Intercompany Logistics
  - Container Tracking
  - Waggon Tracking
- Worldwide Logistics
  - Supply Chain Tracking
  - B2B Communication
- Product Life Cycle
  - Maintenance Records
  - Anti Fraud













# Main Functions of RFID Tags in Industrial Applications

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- Interface with logistic control and guidance systems
- Communication with ERP systems like SAP
- Automated management of loading equipment
- Record quality data
- Save process information
- Store product information
- Support stock management
- Automated goods receipt
- Real time accounting







# **Benefits of HARTING RFID Transponders** in Industry and Transport Logistics



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- Reading range of 2 5m on metals and liquids
- Robust and water-tight housing
- Form factors designed for the applications
- Standardized fitting on loading equipment and objects
- IP 64, IP 67 and IP69K protection classes
- Shock resistant materials that can be used at temperatures up to +85° C (+180°C under development)











# We are focussing on passive UHF transponder at 868 MHz

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RFID tags for industrial and logistic applications

Frequency	Range	
125 kHz	0,5 m	
1,81 MHz	0,15 m	
13,56 MHz	0,8 m	
433 MHz	1 m	
860 – 956 MHz	10 m	
2,45 GHz	300 m	

UHF frequencies offer:

- Long distance reading and writing
- Use of passive transponders
- Use of EPC Gen2 standard
- Global coordination







# HARfid reading ranges in different applications with different transponder form factors

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### **Excamples**

LT Tag on skeleton container



#### Reading range

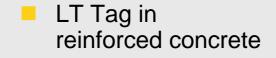
> 3.0 m \*

RFID tags for industrial and logistic applications

RS Tag in metall flange



 $> 2,5 \text{ m}^*$ 





> 2 m \*

TP Tag on pump motor



> 0,5 m \*



## Specification of HARfid LT 86 (NT)

On any object including metallic surfaces like skeleton

## - more products under development

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### Specifications

**Applications** 

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Frequency
Chip (e.g. Impinj)
User memory size
868 MHz
Monza2
96 bit

boxes or on containers for fluids

Read range (free space, 2W ERP)

– ProtocolEPC C1 Gen2

#### Temperature range

Operational (w/o progr.)
 Operational (with progr.
 Storage
 -40/+85°C
 -40/+45°C
 -50/+85°C



#### Housing

- Size 123x30x8 mm

Env. protection class
 IP64, IP67, IP69K

ColourMaterialPBT

MountingM4 screws or

rivets with washers

min. 3m

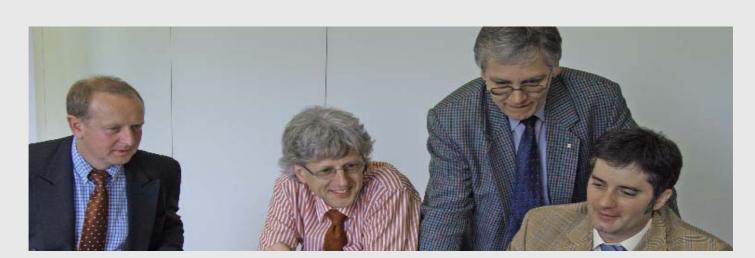
2007-08-30



### **Business Model HARfid**

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- HARTING Mitronics is focussed on design and production of passive UHF transponders
- Customers are system integrators and distributors
- RFID tags for industrial and logistic applications
- Close cooperation with partners for integration, implementation and readers for RFID projects
- Offering customized transponder on exclusive contract basis





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