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RFID tags for  
industrial  
and logistic  
applications

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



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# Key Advantages of RFID Systems – Focus UHF

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

## 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

- 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



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# Main Functions of RFID Tags in Industrial Applications

- 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





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# Benefits of HARTING RFID Transponders in Industry and Transport Logistics

- 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)



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# We are focussing on passive UHF transponder at 868 MHz

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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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## Excmamples

- LT Tag on skeleton container



## Reading range

> 3.0 m \*

- RS Tag in metall flange



> 2,5 m \*

- LT Tag in reinforced concrete



> 2 m \*

- TP Tag on pump motor



> 0,5 m \*

\* 2 Watt ERP



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# Specification of HARfid LT 86 (NT)

## - more products under development

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### ■ Applications

- On any object including metallic surfaces like skeleton boxes or on containers for fluids
- Read range (free space, 2W ERP) min. 3m

### ■ Specifications

- Frequency 868 MHz
- Chip (e.g. Impinj) Monza2
- User memory size 96 bit
- Protocol EPC C1 Gen2

### ■ Temperature range

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

### ■ Housing

- Size 123x30x8 mm
- Env. protection class IP64, IP67, IP69K
- Colour black
- Material PBT
- Mounting M4 screws or rivets with washers







# 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
- Close cooperation with partners for integration, implementation and readers for RFID projects
- Offering customized transponder on exclusive contract basis

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*Thank you for  
your attention*

