

## Key facts - ID®contacless identification & TELID® sensing technology



- strong expertise in implementing ID and sensor technology in low power wireless applications
- Miniaturized and rugged identification solutions
- Battery-less, battery-assisted and battery-driven sensor system implementations
- high accuracy measurement based on patented measurement methods
- Knowledge and product interpretation for harsh environmental conditions like hightemperature, steam-pressure or chemical impacts
- Implementation of temperature, pressure, humidity, moisture, strain, acceleration and inclination-sensing product-wise
- OEM integration of wireless sensing systems in custom environment from concept to working system, including drivers, services
- integration support or cloud data collection iID<sup>®</sup>sens
- Systems integration based on wire interface, libraries, services and proven iID®contactless software tools









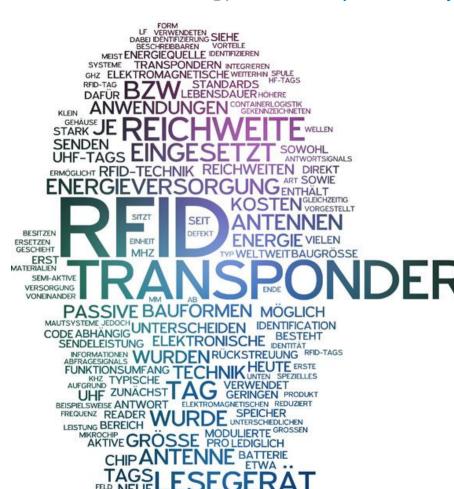




## Advantages of iID®TAG and iID®Reader



Innovative technology formed in years of experience and leadership in the RFID industry



#### **iID®TAG**:

- ultra small size and robust design
- integrated antenna
- attachment to metal objects possible
- corresponds to global standards, UDI and GS1 EPCGlobal
- possible customization of TAG-size, housing and user memory
- data security with authentication and password protection

#### iID®Reader Modules:

- contactless data communication
- compact standard and OEM designs
- Integration support and deep knowledge about radio validation
- simple integration in existing devices
- low energy consumption

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# **Technology**

#### **Electronic tags**



#### **General features**

## 1.6x1.6x0.5mm<sup>3</sup> ... 4x4x1mm<sup>3</sup>

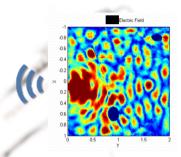
- Electronic device without battery for long term secure IoT applications
- Unique identification
- Secure non volatile user data memory for additional product data
- State of the art features for security and privacy protection
- AES cryptographic operation and tap unique data authentication

#### Component



- Miniaturization and extreme form factors
- Special product injectable, non removable designs
- Robust designs for long term medical application
- Optional tamper protection and sensor integration

#### Interface



- Wireless energy and data transmission
- Short or medium range communication
- UHF ISO1800-6c Rain compatible
- HF ISO15693, ISO14443A/B, NFC
- Tap unique authentication message allowing confidential and integrity protected data exchange while accessing with standard RFID readers



# **Technology**

#### Reader & Writer module



#### **General features**



32x8x2mm<sup>3</sup> ... 52x26x5mm<sup>3</sup>

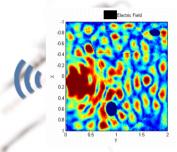
- Integrable electronic device for long term secure IoT applications
- High flexibility for integrated or external antenna
- Reader & Write Modul in one device
- Easy integration into existing medical devices
- Integrated high level **functions**
- Communication with miniaturized TAGs.

#### Component



- Customization and extreme form factors
- Special packaging and robust design
- Variable interfaces: RS232, I2C, USB, Ethernet
- Connection of multiple antenna array
- Extreme low power consumption

#### Interface



- Wireless energy and data transmission
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# **Advantages of electronic identification of replacement parts and disposables**







#### Component Production

- Attach electronic TAG to product
- Program birth record
- Use for Production control and in house logistics



#### Device infrastructure

• Integrate OEM modules in medical devices

#### Usage monitoring

- Record use data
- Traceability of usage and cleaning processes
- Calibration monitoring
- Documentation of life cycle stored inside component

#### Device usage

- Identification in device infrastructure
- Avoid product counterfeit
- Device parameters setup

#### volatile memories

**Electronic tags** 

provide rewriteable, non-

#### Ditribution channel

- Product logistics
- Ensure originality

#### Product originality proof

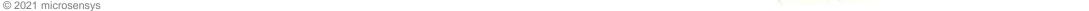
- Product life cycle monitoring
- Product traceability
- · Calibration handling
- Usage monitoring
- Product maintenance

#### Human handling

- Avoid fail handling
- Electronic product documentation link







## **Application: accessory identification of medical** device system



Product originality, product life cycle, traceability, calibration, device setup

#### **Technical**

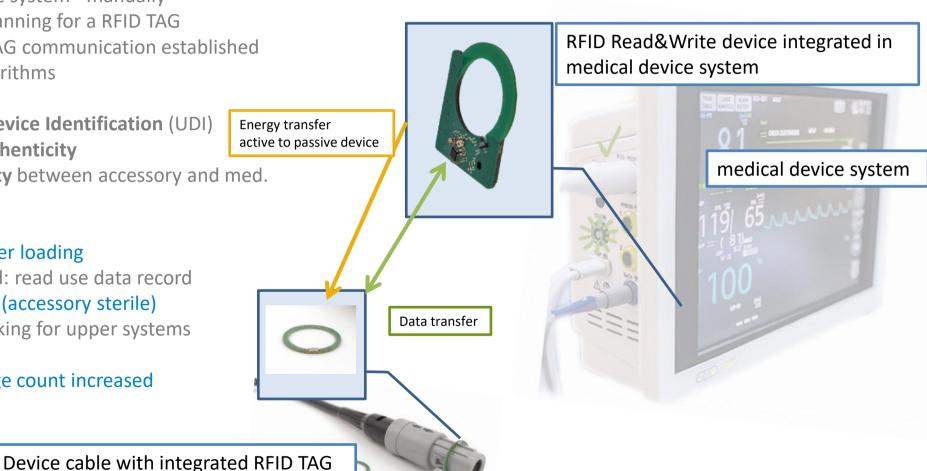
- 1. Cable connected to the system manually
- 2. RFID Reader device scanning for a RFID TAG
- 3. TAG found Reader-TAG communication established
  - runs functional algorithms

#### **Functional**

- 3.1. proof TAG Unique Device Identification (UDI)
- 3.2. proof of product authenticity
- 3.3. proof of **compatibility** between accessory and med.

System

- → Accessory approved
- → Full wireless parameter loading
- 3.4. open use data record: read use data record
- → Operation permission (accessory sterile)
- 3.5 automatic usage tracking for upper systems
- 3.8 usage monitoring
- -> Object integrated usage count increased



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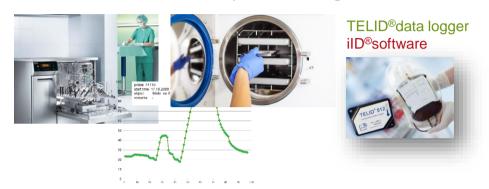
## **Further Applications**



## ilD®TAG, TELID®Sensor-TAG and Datalogger, ilD®reader, ilD®software & tools

#### Temperature and pressure monitoring for

Autoclaves, disinfectors, transport and storage



#### **Surgical Instrument & Robot accessory Tagging**

O.R., hospital





iID®reader (mobile)

#### **Telemetric measurement**

Medical implant, maintenance





iID®reader (mobile)

#### **Probe Tagging & Administration**

Laboratory, tissue processor







ilD®software

iID®MINI-TAG



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## microsensys - RFID solutions at a glance

#### **Cooperation:**

- Product development and production improved within over 30 years of experience
- Customized and miniaturized RFID TAG and RFID reader module designs
- Straight and qualified system integration

#### **Product benefits:**

- Process automatization
- Product authentication and UDI to prevent fail usage
- Safety and quality improvement
- Object traceability during complete product life cycle
- Data on object/device
- Increased security level and robustness compared to traditional tracking solutions

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## **Questions?**

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