



1 The RFID Wristband identifies objects or picking areas during handling operations.

2 RFID Wristband consisting of the strap and a reader module with a rechargeable battery.

## "RFID WRISTBAND" IDENTIFIES MOBILE OBJECTS DURING HANDLING OPERATIONS

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### RFID Technology Makes Production and Logistics Operations Transparent

RFID technologies furnish a variety of options to systematically control, monitor and thus more efficiently organize production and logistics processes. The

- unique identification of parts and items in ongoing processes,
- transparent tracking of flows of objects,
- distributed acquisition of data to assess handling processes

enhances the transparency of production and logistics processes.

With their RFID Wristband, researchers at the Fraunhofer IFF have developed a mobile solution that identifies objects or picking areas in order picking or assembly processes quickly and automatically. The RFID

Wristband eliminates additional procedures that require handheld readers to validate processes.

### Benefits at a Glance

- Shortened cycle times through reliable reading of RFID transponders during operations with "free hands"
- Ergonomic design integrating all technical components in one housing
- Quick battery change for uninterrupted use
- High comfort through customizable strap
- Customizable hardware and software



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### Reliable Reading of RFID Transponders with "Free Hands"

Numerous handheld systems exist for RFID applications with mobile equipment. But simple handling processes or confirmation of handling operations require additional procedures since not only objects but also an RFID reader must be handled.

The Fraunhofer IFF's RFID Wristband is designed so that the antenna integrated at wrist level identifies items while leaving the wearer's hands free and not requiring any additional procedures. This cuts valuable seconds off the confirmation process, which translate into a rapid return on investment in the systems solution.

### Design and Principle of Operation

The RFID Wristband consists of a customizable strap and a reader module with an integrated UHF RFID system (ETSI frequency band of 865.6 to 867.6 MHz), an antenna, an air interface that transmits data and a battery. The reader module has a status LED, which displays status during RFID Wristband applications, and a tweeter that emits acoustic signals.

The strap is placed worn on the wrist. Neodymium magnets attach the reader module to the strap, thus enabling several workers to use one reader module. The customizable strap assures high hygienic standards.

The RFID Wristband was designed so that it does not interfere with handling processes are not impeded and it can be worn throughout a shift without causing fatigue.

### Automatic Variation Analysis in Ongoing Processes

Reliably and clearly identifying items or picking areas in established handling operations, the RFID Wristband transmits data on pertinent items and processes to a central system in real time. Parts picked in assembly and supply processes can thus be verified automatically. This makes the RFID Wristband an ideal addition to such assistance systems as pick-by-light or pick-by-voice.

### Communication through Standard Air Interfaces

The energy-saving ZIGBee standard is employed to connect the RFID Wristband to higher-level systems. If desired, it can also be connected by Bluetooth or WLAN.

The interface transmits all of the data read with the wristband to a higher-level system where software solutions customized for particular applications map further functions such as documentation of handling processes or verification of picking operations in assembly processes. Light or acoustic signals directly on the wristband give users process feedback, e.g. warnings of picking errors or confirmations of correct actions.

### Our Services

Allow us to help you organize your production and logistics operations reliably and sustainably with RFID technology. As your technology partner, we will develop holistic concepts for the use of RFID in your processes.

We rely on custom solutions and customize our systems solutions such as the RFID Wristband for your specific applications.

In addition to optimizing mobile RFID systems, we can also provide you solutions for high performance bulk reading, such as our RFID Tunnel Gate, and for interfacing RFID applications with IT.

**3** Customizable strap for high comfort.

**4** The reader module attached to the strap with neodymium magnets.

Pictures: Dirk Mahler