

Accurate positioning and asset management

Combining the strengths of RFID and Radar

To improve the understanding of material and tool flows within your facility, tracking the precise location of objects together with their unique IDs can be highly beneficial.

While Radar is effective for determining position, it struggles with the identification of objects. Conversely, RFID excels in identification but provides only approximate positioning at best.

Our innovative combination of RFID and Radar delivers both identification through battery-free tags and precise centimeter-level positioning. This synergy enables real-time tracking, reducing inefficiencies and improving operational workflows.

With applications across various industries, our solutions can significantly enhance inventory management, asset tracking, and process automation. By integrating these technologies, you gain valuable operational insights and can make data-driven decisions.

At Fraunhofer IMS, our dedicated team develops tailored solutions to meet your specific needs, from system design to RF and ASIC development, all the way to on-site validation.

Customer Benefits

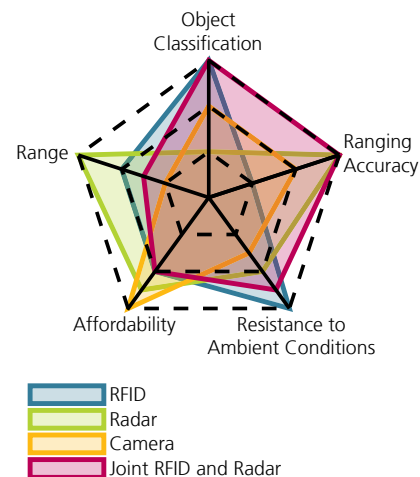
- Real-time transparency of material and tool flows
- Improved efficiency and data-driven decisions
- Maintenance-free, battery-free operation
- Tailored solutions from design to deployment

System Advantages

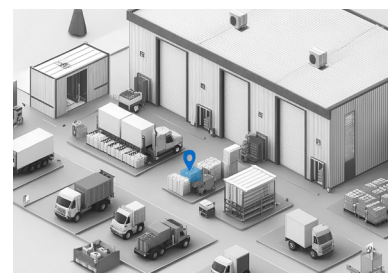
- Combines Radar precision with RFID identification
- Centimeter-level accuracy for multiple tags
- 24 GHz battery-free backscatter tags with extended range
- EPC-compatible and customizable communication

Application Fields

- Manufacturing and production
- Logistics and warehousing
- Healthcare asset tracking
- Inventory management and process automation



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Joint RFID and Radar

Identification	RFID based
Positioning	Radar based
Accuracy	Centimeter-level
Range resolution	Unlimited
Update rate	< 100 ms
Number of tags (simultaneous)	> 50
Carrier frequency	24 GHz
Tag power consumption	~ 100 μ W

Contact and further information

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