

RFID FOR IT ASSET TRACKING & MANAGEMENT

INTRODUCTION

The accurate and timely tracking of IT assets is a vital component of a profitable strategy for any organization. This task is even more complex for companies with large data centers made up of thousands of servers distributed all over the world. Real-time IT asset tracking – enabled by RFID – addresses these challenges and is leading the way to truly automated data centers and enterprise IT environments.

RFID-enabled solutions can be deployed and utilized in several configurations, each addressing the varying needs of large and small IT departments and data centers alike. From RFID-enabled doorway choke points (portals), to RFID handheld readers, to RFID readers embedded into server racks, using RFID to track IT assets offers organizations the opportunity to improve efficiencies, reduce operational expenses, increase asset security, enhance regulatory compliance, and create a more efficient use of data center space.

While knowing the real-time location of IT assets may be one the most compelling reason to invest in a solution designed to automatically manage and track assets, there are other factors prompting companies to invest in RFID-enabled asset tracking technology, including:

Inventory Processing –

Failing to maintain a current and accurate inventory count can impact accounting processes and lead to unessential asset purchases. Automating inventory processing with RFID reduces the time needed to conduct a manual inventory, saves on labor costs and reduces unnecessary asset purchases.

Cannibalization, Warranties and Claims –

Purchased and leased equipment should be able to be identified quickly to determine proper configuration of memory, disk, etc. This is especially important in order to avoid end of lease penalties. Similarly, computers and other IT equipment needs to be located and evaluated before warranties expire and prior to repair claims processing.

Government and Legal Compliance –

Many companies need to comply with legal regulations and mandates that require accurate tracking and reporting of fixed assets and their depreciation. With RFID-enabled asset management processes in place, companies have real-time visibility into the location and movement of their assets and can create audit trails for government-mandated reports.

Globalization –

As companies expand, and their equipment becomes widely dispersed, managing IT assets and sensitive data becomes more challenging. To avoid incurring customs penalties and to meet compliance mandates, companies must be able to accurately account for the products they are importing, exporting and deploying worldwide.

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THINGMAGIC, A JADAK BRAND

Through consistent innovation and a tailored go-to-market approach, ThingMagic, a JADAK brand, is focused on serving a broad set of markets and customers, including some of the world's premier healthcare companies, retailers, consumer companies, automotive firms, manufacturers and industrial automation firms. Advantages of working with JADAK include:

- Breadth of product line, including high-performance fixed RFID readers and RFID reader modules
- A common programming interface (API) across all products, providing a robust development platform for a wide range of products and applications
- Strong partnerships with key technology providers, offering early access to a wide variety of RFID antennas, tags and other complementary solutions for qualification with customer-driven applications
- Worldwide partnerships with other Novanta companies
- Engineering Services for clients with challenging sensor and embedded technology related projects

RFID is being embedded into a wide range of form factors and applications and customers are quickly moving beyond trying to source a one size fits all product. To support this growing trend, JADAK offers a broad portfolio of detection and analysis solutions, as well as a wide range of fixed HF and UHF RFID readers and modules to facilitate the integration of the right technology into your application.

ThingMagic Fixed UHF RFID Readers Include:

Mercury6 (M6) A low profile, high-performance 4-port RFID ruggedized reader for indoor and outdoor applications and Power over Ethernet (PoE) capability.

Sargas A small, high performance, multi-protocol, networked 2-port reader in low profile enclosure with both read and write capability.

Astra-EX An integrated 2-port reader/antenna designed for use in enterprise and industrial environments.

USB Pro A low cost reader for developing and deploying interactive read/write applications, such as tag commissioning, handheld and desktop operations.

ThingMagic Embedded UHF RFID Reader Modules Include:

Nano The smallest form factor with low power consumption, ideal for battery-operated, low cost, small form factor portable readers.

Micro A 2-port multi-protocol high performance module that makes it efficient and easy to develop into projects.

Micro-LTE is a 2-port tiny reader designed to meet the demands of high performance handheld, mobile and stationary readers.

Nova An ultra-small, power efficient, EPC Class 1 Gen 2 reader/writer.

M6e 4-port embedded module for stationary reader and mobile solutions, including those that require single to many read points at various read ranges.

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Antennas

We inventory and sell a variety of third-party UHF antennas in support of the readers above. If the required antenna is not carried in inventory, we work with our customers to identify a suitable third-party product. Customers also have the option to use UHF antennas that they have identified and sourced independently.

ThingMagic has qualified the following antennas for IT asset tracking applications. Test results are available upon request.

- Omnidirectional rod antennas with fiberglass radome, 902-928MHz, Omnidirectional gold anodized support pipe and N Female 50ohm termination, normalized gain 6dBd, length 5 feet (ideal for racks, since it is easily mountable and has a length that covers most of the server rack)
- Circularly polarized antenna, 5.5dBiC, 5.2x5.2x0.71inches, 902-928MHz, RTNC, 50ohm termination, 3dB Beam width – Azimuth 100degrees (ideal for cabinet applications due to low gain and high beam width, used in the toolbox of F-150)
- Circularly polarized antenna, 8dBiC, 10.2x10.2x1.5inches, 902-928MHz, RTNC, 50ohm termination, 3dB Beam width – 65degrees (ideal for portal applications due to high gain and easy install)

Tags

We do not manufacture UHF RFID tags, but we work with our customers to help identify appropriate tags and tag sources.

ThingMagic has qualified the following RFID tags for IT asset tracking applications. Test results are available upon request.

- Omni-ID (on-metal)
- RCD-Technology (on-metal)
- Confidex Halo (on-metal)
- Xerafy (on-metal)
- Alien Squiggle (non-metal)
- Alien 2x2 (non-metal)
- Alien Higgs (non-metal)
- NXP (non-metal and for applications requiring IO triggering like lighting up an LED or buzzing a buzzer)
- PowerID (BAP tags for greater distances and environmental features like temperature; very specialized tag provided to ThingMagic because of our advanced technology relationship with PowerID)

Middleware and End-User Applications

While we do not offer middleware or end-user software applications, all ThingMagic readers include software tools that enable our customers and partners to design and develop their own applications. Commonalities across a wide variety of RFID deployments have led several partners to design readily-available and/or easily modified applications.

ThingMagic has been qualified with the following middleware solutions used in IT asset tracking solutions:

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- IBM Websphere
- Visionael IT asset tracking tool (Aricent partner)

SUMMARY

The benefits of using passive UHF RFID for IT asset tracking are many and can be realized across all aspects of enterprise operations including receiving, asset inventory, asset security, asset location, asset management and asset decommissioning. By deploying ThingMagic RFID-enabled solutions, IT departments and data centers can realize the following:

- An inexpensive to operate, enterprise-wide solution, including low-cost RFID readers and tags
- A fully automated view of all tagged assets in seconds
- The ability to schedule periodic scans or perform on-demand as needed
- Labor reduction related to physical inventory, e.g. no need to open racks or move equipment prior to scanning
- Verifiable audit trail
- Remote operation
- Self-contained RFID-enabled IT rack systems
- The ability to retrofit existing IT equipment e.g. racks, carts, servers, etc.

As experts in developing cutting-edge RFID products, ThingMagic, a JADAK brand, continues to challenge the conventional positions taken by others, resulting in innovative uses of RFID for projects thought to include “un-solvable” problems. For example, ThingMagic has challenged the position that RFID readers do not provide reliable tag reads if they are implemented in a confined metallic environment such as an IT server rack – leading to proof of concept in-rack RFID reader solutions. This distinctive approach to research and product development sets us apart from others and allows our partners to realize faster ROI and deliver differentiated services to both internal and external customers.

Many suppliers can offer a wide variety of RFID products to choose from but unlike most data collection manufacturers, JADAK has one of the broadest RFID product portfolios in the industry, backed by engineers with the resources and technical expertise to help customers implement solutions to meet their specific needs and requirements.

ABOUT JADAK:

JADAK, a business unit of Novanta, is a market leader in machine vision, RFID, barcode, printing, and color and light measurement products and services for original equipment manufacturers. The company designs and manufactures embedded detection and analysis solutions that help customers solve unique inspection, tracking, scanning and documenting challenges. The company is ISO 9001 and ISO 13485 registered.

Novanta is a trusted technology partner to OEMs in the medical and advanced industrial technology markets, with deep proprietary expertise in photonics, vision and precision motion technologies.

ThingMagic is JADAK’s RFID line of products and services.

www.jadaktech.com

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