Novanta

JADAK ThingMagic®, the Engine in RFID Solutions
Engineering More Possibilities

Why partner with JADAK, a Novanta Company?

As a tier-one supplier of Radio Frequency Identification (RFID) solutions to the **healthcare, advanced industrial, supply chain, retail markets, Internet of Things (IOT) and transportation** industries we partner with you to overcome some of the most common challenges you face. Unlike off-the-shelf solution providers, JADAK takes an engineer-to-engineer approach to your application—working directly with your team to get a deep understanding of your challenges then creating purpose-driven application solutions that are a precise fit.

Benefits of our engineer-to-engineer collaboration approach include:

• Extensive, multi-functional engineering expertise in embedded systems, software, electrical, mechanical, RF and optics

• Custom solution utilizing a broad portfolio of RFID technologies that reduces your time to market and maximizes your ROI

• Research, system design, performance, and Bill of Materials (BOM) cost optimizations, resulting in reduced total cost of ownership

• Lifecycle management of the OEM solution from concept through end-of-life

• Flexible partnership—we can perform as much or as little of the design, testing and manufacturing as your team or budget requires

• Finding the perfect solution at a reasonable cost, within your timeline

JADAK
A Novanta Company

Why JADAK ThingMagic® RFID?

Powered by JADAK's world-class ThingMagic® RFID technology, our custom solutions utilize the broadest low frequency (LF), high frequency (HF), and ultra-high frequency (UHF/RAIN®) embedded modules, finished readers and secure access portfolio in the industry. And our entire RFID family utilizes a standard Mercury API, a simple and rapid set-up solution for our partners.

RFID technology can help you:

- Track assets/people throughout your operation
- Reduce workflow time and manual data entry errors
- Better manage stock levels with smart cabinets
- Track maintenance schedules and receive reminders
- Prevent medication delivery and chain of custody errors
- Respond more quickly to drug recalls
- Track sponges and other surgical tools in the OR

- Maintain more accurate sterilization records
- Manage and track inventory levels
- Automatically identify test kits, reagents and other consumables used in IVD
- Track specimens from collection to lab
- Secure access and identification for clinician

RFID System and Antenna Design & Implementation

We'll ensure the solution is specific to your environment by visiting and assessing the surroundings and materials/requirements that are present such as metals, liquids, temperatures, distance to read, and space constraints before designing a system and antenna specific to that environment. And ThingMagic® modules and readers are "tagnostic" and work with every tag vendor out there, so you can be confident the final solution will work every time.

Regulatory Expertise

It's difficult to keep up on the ever-changing world of regulatory compliance—so let us help. We have extensive experience in and stay current with the global regulatory and EMI/EMC compliance regulations and requirements needed for regulated and non-regulated embedded systems. Our team can help you to navigate this process successfully throughout the project.

Secure Access & Identification

We launched the first device on the market to combine barcode and RFID technology, allowing clinicians to securely access medical devices, consumables, and medications—protecting the healthcare facilities consumable revenue stream while also ensuring patient safety.

ThingMagic® RFID solutions include:

- UHF/RAIN Embedded Modules
- HF Embedded Modules
- Secure Access Handheld RFID & Barcode Scanner

- HF/UHF/RAIN Fixed Mount Readers
- USB Readers

ThingMagic® UHF/RAIN RFID Modules

	M7E-TERA	M7E-MEGA	M7E-DEKA	M7E-PICO
Size (mm)	46 x 26 x 4	46 x 26 x 4	18 x 21 x 3	18 x 21 x 3
Antenna ports	4	2	Single 50 Ω connection (board-edge)	Single 50 Ω connection (board-edge)
Interface	UART; 3.3V logic levels 9.6 to 921.6 kbps	UART; 3.3V logic levels 9.6 to 921.6 kbps	UART; 3.3V logic levels 9.6 to 921.6 kbps	UART; 3.3V logic levels 9.6 to 921.6 kbps
RF Power Output	Separate read and write levels, command-adjustable from 0 dBm to +31.5 in 0.5 dB steps, accurate to ±1 dBm	Separate read and write levels, command-adjustable from -10 dBm to +30 dBm in 0.5 dB steps, accurate to ±1 dBm	Separate read and write levels, command-adjustable from 0 dBm to +27dBm in 0.5 dB steps, accurate to ±1 dBm	Separate read and write levels, command-adjustable from 0 dBm to +24dBm in 0.5 dB steps, accurate to ±1 dBm
Read Rate* (tags/second)	Up to 800* tags/second using high-performance settings	Up to 600* tags/second using high-performance settings	Up to 300 tags/second	Up to 300 tags/second
Read Range	Over 12 meters (36 feet) with 6 dBi antenna (36 dBm EIRP)*	Over 9 meters (30 feet)* with 6 dBi antenna (36 dBm EIRP)	Over 4.5 meters (15 feet) with 6 dBi antenna (33 dBm EIRP)*	Over 3 meters (10 feet) with 6 dBi antenna (30 dBm EIRP)

*Best case scenario with good antenna matching

ThingMagic® LF & HF Modules

	ThingMagic® M1-Mini Shielded HF Embedded RFID Module	ThingMagic® M3e HF/LF RFID Secure Access Module (M3e-S (secure)/ M3e-X (non-secure)
Size (mm)	25.4 Diam. / 2.8 H	26 mm x 22 mm x 3 mm
Antenna	Internal	HF: Supports direct connection to an external antenna with 1 uH, 0.8 Ohm matching LF: Compatible with a differentially driven coil antenna with a nominal inductance of 505 uH
Interface	UART (TTL), SPI**, USB,12C	UART (TTL), I2C2**, SPI2** Reset (Shutdown) line
Read Range	Up to 6 cm	Up to 5 cm
Protocol Support	ISO 15693	ISO 15693 (HID iCLASS), ISO 14443A

**This interface will be supported in the future

ThingMagic® Finished Readers

ThingMagic® Elara UHF/RAIN RFID Reader

- An all-in-one plug-and-play USB RFID scanner
- ARM based Cortex-M4 architecture and integrated antenna reaches up to 6 ft (2m) read range and reads tags at 65 tags/sec
- Supports pre-loaded autonomous workflows

ThingMagic® USB Pro UHF Reader

- All-in-one USB RFID reader for quick setup and easy customization
- Self-contained form factor encloses the reader module, antenna, and processor
- Max range of 4 ft (1.2 m) with USB power source and reads tags at 50 tags/sec

ThingMagic® Sargas 2-port UHF/RAIN Fixed Mount RFID Reader

- Low profile enclosed, high-performance, multiprotocol, networked reader capable of both read and write RFID functions
- All-in-one unit with onboard processor, DDR memory, and removable flash storage port
- Max range of 30 ft (10 m), adjustable RF output range (0 dBm to +30 dBm), reads tags at 750 tags/sec

ThingMagic® IZAR 4-port UHF/RAIN Fixed Mount RFID Reader

- Compact, programmable, network-attached fixed reader capable of both read and write RFID functions
- Embedded with a powerful ARM Cortex processor running the Linux Operating System (OS), and generous amounts of DDR and FLASH memory
- Broadest Range of Operating Temperatures for Both indoor and Sheltered Outdoor Environments

Handheld RFID and Barcode Scanners

ThingMagic® Flexpoint HS-1RS Secure Access Handheld RFID and Barcode Scanner

- Enabled with industry leading Imprivata software for SSO and secure authentication
- 1D/2D barcode scanning, HF & LF RFID reading capability in a single device
- Simplifies workflows, improves time efficiencies, and infection control
- Compatible with a broad range of HF & LF RFID badge types/ transponders

ThingMagic® Flexpoint® HS-1R Handheld Barcode Scanner

- Integrates 1D/2D barcode scanning with RFID read and write capabilities
- Programmable to provide visual, audio and tactile feedback

ThingMagic® UHF Module and Finished Reader Development Kits

ThingMagic® UHF Module and Finished Reader Development Kits

- Everything needed to read and write RFID tags and begin developing RFID-enabled applications with specific modules or readers

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Let's connect today and discuss how we can partner on your next project. Call **1.888.388.0490** or email us at **info@jadaktech.com.** For specific regions, please use the contact information below.

To explore our company and solutions further, including cases studies, webinars and other research material, please visit our website at **www.jadaktech.com**