

# ThingMagic M3E HF/LF RFID Secure Module



## Features & Benefits

- Compact footprint
- Broad range of HF and LF transponder support, including secure access credentials
- Integrated Secure Access Module (SAM)
- Strong partnership with HID Global for encrypted badge reading
- High performance, long read range
- Full modular certification
- Field enablement of secure access features
- Flexible SKU options
- Future-proof and allows flexibility to add features
- Universal ThingMagic Mercury SDK/API
- All leading HF RFID protocols are supported including ISO 15693 (HID iCLASS), ISO 14443A/B ISO18092 (NFC)

## Enabling HF/LF RFID secure access in a compact, embedded module

Part of our Secure Access family of products, ThingMagic M3e is a compact embedded module which supports both High Frequency (HF) RFID and Low Frequency (LF) RFID protocols. The M3e is the only HF/LF module on the market with a totally integrated Secure Access Module, an IC that handles secure communications and manages security keys required to access more than just the publicly available information on an RFID tag. The M3e module supports complex HF RFID tag interactions as well as the flexibility to read both HF and LF ID cards to authenticate personnel across a wide spectrum of security environments.

The M3e can drive high gain HF and LF antennas to achieve extended read range and is pre-certified for these high gain antennas. Additionally, the M3e is the only secure HF/LF module that provides full modular certification, greatly reducing the burden on OEMs for regulatory filing requirements as well as providing flexibility in choosing the antenna best suited for the application.

The M3e platform uses the same Mercury API as other JADAK ThingMagic products, allowing for easy software integration and customization based on form-fit-function SKUs. And the module is flexible enough to allow OEMs to tailor a license that enables the features of interest in the field.

The M3e module is HID enabled, and by activating the license, customers can ensure that encrypted iClass badges can be read now or whenever the facility is ready. HID Global is a market leader in access control technology and solutions, foundational RFID and other sensing technologies as well as secure encryption algorithms that are proprietary to HID and widely adopted around the world. This partnership provides unique RFID security key management that enables an added level of security to the most popular RFID SmartCards.

**Ideal Applications include:** Nurse's Carts; Med Dispensing & Pharmacy; Anesthesia Carts; Patient Monitoring; Blood Tracking; Inventory Cabinets; Infusion Pumps; Pneumatic Systems Transport; Ultrasound Machines; POC / IVD Analyzers



# ThingMagic M3E HF/LF RFID Secure Module

## Specifications

RFID	
RF Frequency:	HF: 13.56 MHz LF: 125 kHz and 134.2 kHz <sup>2</sup>
Supported Transponders <sup>1</sup>	<b>HF:</b> ISO 15693 (HID Seos®, HID™ iCLASS, HID™ iCLASS SE, iCODE SLI, iCODE SLI-S, iCODE SLI-L, iCODE SLIX, iCODE SLIX-S, iCODE SLIX-L, iCODE DNA), ISO 14443A/B (MIFARE Classic, MIFARE Classic EV1, MIFARE DESFire EV1, MIFARE DESFire EV2, MIFARE Plus, MIFARE SMART MX, NTAG2xx) <b>LF:</b> (read only) 125 kHz (HID Prox II, HID PROX, HID DuoProx II, HID Micro Prox, HID ProxKey III, AWID, EM4100, HITAG1/S, HITAG2)
Antenna:	<b>HF:</b> Supports direct connection to an external antenna with 1 uH, 0.8 Ohm matching <b>LF:</b> Compatible with a differentially-driven coil antenna with a nominal inductance of 505 uH (with less than 10 Ohms of resistance for best performance)
Read Range:	<b>LF:</b> Up to 5 cm (2.0", Tag and antenna dependent) <b>HF:</b> Up to 5 cm (2.0", Tag and antenna dependent)
Physical	
Dimensions:	26 mm x 22 mm x 3 mm ( <b>US measurements</b> )
Mounting:	Solder down (SMT)
User Interface and Software	
Control/Data Interface:	UART (TTL), I2C <sup>2</sup> , SPI <sup>2</sup> Reset (Shutdown) line
SDK/API:	ThingMagic Mercury API
GPIO	4 bi-directional TTL
Electrical	
DC Power Requirements	Voltage: 3.0 - 5.5 VDC Current: No more than 0.3 A at 4.7 V when reading; idle and sleep modes supported
Safety, Regulatory and Environmental Compliance:	FCC Class B, Industrie Canada (IC), , RED 2014/53/EU, CE, , ROHS, REACH, WEEE
Environmental	
Operating Temp.:	-40° F to 149° F (-40° to 65°C) at mounting surface
Relative Humidity:	95% RH non-condensing
Vibration:	18 shocks of 1000g at 23°C applied via the mounting surface. Sinusoidal vibration of 1.0" peak-to-peak displacement from 5 to 13 Hz, 10g acceleration from 13 to 500 Hz and 1.0g from 500 to 2000 Hz.
Ordering	
PLT-RFID-M3E-X	ThingMagic M3e module with LF/HF RFID
PLT-RFID-M3E-S	ThingMagic M3e module with Secure LF/HF RFID, HF/LF encrypted badge reading capabilities when activated with the optional additional secure crypto license activation (must purchase license separately)
PLT-RFID-M3ES-LIC	HF/LF RFID secure crypto license (can only be applied to the M3ES module)

**All specifications subject to change without notice.**

<sup>1</sup> Contact JADAK for latest transponder support list

<sup>2</sup> Second Release

## 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 business designs and manufactures custom embedded detection and analysis solutions that help customers solve unique inspection, tracking, scanning and documenting challenges. JADAK is based in Syracuse, New York, with sales and technical locations across the globe. For more information, visit [www.jadaktech.com](http://www.jadaktech.com). ThingMagic is JADAK's RFID line of products.

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. For more information, visit [www.novanta.com](http://www.novanta.com).



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