

GETTING STARTED WITH
EMBEDDED RFID
**READER
MODULES**

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Thank you for showing interest in Embedded RFID Reader Modules from atlasRFIDstore.com. Atlas is proud to carry JADAK's ThingMagic line of RFID Reader Modules.

UHF MODULES

- M6E
- Micro
- Micro-LTE
- Nano

NFC, HF, & LF MODULES

- M3E
- M1-Mini
- Gemini
- M2

Unlike **finished RFID readers** that can be deployed right out of the box, embedded reader modules are associated with a product development cycle. This document is intended to guide you through the development cycle and to help you understand how finished readers differ from embedded RFID reader modules.

DIFFERENCES BETWEEN FINISHED READERS AND EMBEDDED READER MODULES

At the most basic level, a finished RFID reader will include a processor, memory, power supply, antenna connectors, and a durable case built around an RFID reader module. Out of the box, a finished RFID reader is ready for deployment and, when paired with an RFID antenna, capable of reading RFID tags of a corresponding frequency.

Embedded Reader Modules are components of custom developed RFID Readers or RFID-enabled Products (requiring custom engineering) that must be paired with a motherboard, provided with a power source, as well as connected to an antenna in order to read RFID tags.

Note that ThingMagic finished readers are built using embedded modules. Both products use the same software tools so that migration from the finished reader to an embedded module design is simplified. The same software code can be used and the same performance can be achieved.

Some customers start with finished readers for rapid testing, proof-of-concept, and market testing. Once their product design is finalized, development time associated with the RFID component is reduced.

IDEAL CUSTOMER PROFILE FOR EMBEDDED RFID READER MODULES

Where the ideal customer for a finished reader is an individual who may lack either significant hardware engineering experience or the time to spend on product design and development, module customers have both hardware engineering experience AND a financial incentive to develop from the modular level up. Most module customers fall into one of two categories:



M6E

RFID Enabling an Existing Product

Some customers already have an electronic device or a product that contains an electronic device into which they want to integrate RFID technology. Examples might include a tablet, a smart cabinet, or a thermal transfer printer.



MICRO

Developing a New Product with RFID Capability

Some customers are creating an entirely new product into which they want to design RFID capability.

ADVANTAGES OF EMBEDDED RFID READER MODULES

For both of the customers mentioned above, reader modules provide several advantages:



MICRO LTE



NANO

- **Price** - Because the customer only pays for the hardware that the application requires, mass scale implementations are often much more cost-effective when the project leverages RFID reader modules. In this case, the customer can streamline their bill of materials by avoiding readers that are otherwise “over-engineered” for the application in question.
- **Flexibility** - When developing using RFID Reader Modules, the customer has greater flexibility to specify the module’s frequency ranges, sensor options (Bluetooth/Wi-Fi/GPS/PoE), and processing power instead of being limited to a finished reader’s existing design.
- **Form Factor** - While finished readers come in a large enclosure, embedded RFID modules enable customers to tailor fit the RFID reader’s finished dimensions based on the application’s needs.
- **Worldwide Deployments & Certifications** - ThingMagic embedded modules are firmware-adjustable for the different worldwide frequency requirements. Finished readers are certified for particular regions. ThingMagic modules also carry modular certification, thereby saving the product manufacturer time and cost associated with product certification.

PRODUCT DEVELOPMENT CYCLE FOR EMBEDDED RFID READER MODULES

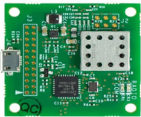
ThingMagic recommends that customers follow the steps below and move from proof of concept to full scale deployment using RFID reader modules.



M3E



M1 - MINI



GEMINI



M2

01

MODULE DEVELOPMENT KIT (SOFTWARE)

The first step for customers is to interact with the Development Kit. Customers can use the basic module, chassis, and power adapter to attach antennas and begin reading tags in less than an hour. For ThingMagic's UHF modules and the M3e (HF/LF) module, the Mercury API is ready for download to enable a developer to begin writing code and interfacing with the reader module. The M1-Mini, M2 and Gemini modules utilize SkyTek APIs.

The module development kit is ideal for:

- Testing different antennas without breaking delicate ports
- Connecting to a PC and running URA (Universal Reader Assistant) to test in various environments with a variety of tag types.
- Technical Support – atlasRFIDstore provides free technical support for all of ThingMagic's RFID modules.

02

MODULES AT SCALE (MASS PRODUCTION)

Testing with a Development Kit allows a user to develop an integrated solution or design a product using an embedded RFID module. Once the development process is complete, the customer would begin purchasing individual reader modules in volume.

The steps outlined above represent the best practices for embedded module RFID deployment as defined by ThingMagic. Attempting to skip a step in the process is strongly discouraged.

CONTACT

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If you have any additional questions about if RFID is right for your application, or about RFID modules, don't hesitate to [contact us](#).

RFID

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EXPERTS

ABOUT US



Founded in 2008, atlasRFIDstore is a trusted source in the RFID hardware industry. We are a global retailer providing customers a secure, one-stop location where you can buy RFID components for your own systems and applications. atlasRFIDstore sells name-brand products in virtually every RFID hardware category, so you can build cost-effective RFID solutions across a variety of verticals.

The atlasRFIDstore team focuses on creating the absolute best customer service experience and works with you to select the right RFID equipment for your systems. Our sales engineers are highly trained in the field of RFID and are ready to answer your questions, big and small. While we may not immediately have an answer, we'll diligently work for you to find a solution. Our offices are located on Morris Avenue, in downtown Birmingham, Alabama. We have customers all around the globe and ship products worldwide.