Tiny Multi-Protocol 2-Port, Embedded UHF RAIN® RFID Module

ThingMagic Micro-LTE is one of the smallest 2-port, multi-protocol, embedded UHF RAIN RFID modules. ThingMagic Micro-LTE delivers the size, operating efficiency, RF power, and flexibility needed to embed UHF RFID into applications where small form factor is important. The 2-port Micro-LTE is optimized for small tag populations reading 50 tags/second. It features low power consumption, especially helpful for battery-operated solutions.

ThingMagic Micro-LTE’s wide RF output range (-10 dBm to +30 dBm) is a key requirement for RFID-enabled printers, tag commissioning statements, and point-of-sale readers.

ThingMagic Micro-LTE has flexible mounting options, with both edge pads, for soldering the module directly to a motherboard and a Molex connector for board-to-board connections. The two RF connections to the antennas can be made via edge pads or U.FL connectors.

ThingMagic Micro-LTE is supported by ThingMagic API.

Applications:

- RFID-Enabled Printers, Desktop and Portable
- Tag Commissioning Stations
- Point of Sale Devices
- Handheld Devices and Scanners
- Mobile/Portable
- Stationary
- Battery-operated
- Smartphone Accessories
Ordering Information

Module             M6E-MICRO
Development Kit    M6E-MICRO-DEVKIT

Physical
Dimensions        46 mm L x 26 mm W x 4.0 mm H (1.8 in L x 1.0 in W x 0.16 in H)

Tag / Transponder Protocols
RFID Protocol Support
EPCglobal Gen 2V2 (ISO 18000-63) with DRM. Optional AEI ATA, IP-X and ISO 18000-6B

RF Interface
Antenna Connector
Two 50 Ω connections (board-edge or U.FL) supporting two monostatic antennas
RF Power Output
Separate read and write levels, command-adjustable from -10 dBm to +30 dBm in 0.5 dB steps, accurate to +/- 1 dBm

Regulatory
Pre-configured for the following regions:
FCC (NA, SA) 902-928 MHz; ETSI (EU) 865.6-867.6 MHz; TRAI (India) 865-867 MHz; KCC (Korea) 917-920.8 MHz; ACMA (Australia) 920-926 MHz; SRRC-MII (P.R. China) 920-925 MHz; MIC (Japan) 916.8-923.4 MHz; ‘Open’ (Customizable channel plan; 865-869, 902-928 MHz)

Data/Control Interface
Physical
28 board-edge connections or Molex low profile connector (53748-0208) providing DC power, communication, control and GPIO signals
Control/Data Interfaces
UART; 3.3V logic levels 9.6 to 921.6 kbps / USB 2.0 interface (12 Mbps)
GPIO Sensors and Indicators
Two 3.3V bidirectional ports configurable as input (sensor) ports or output (indicator) ports
API support
C#/.NET, Java, C

Power
DC Power Required
DC Voltage: 3.5 to 5.25 V
**DC power consumption @ RF level:
5.5 W @ +30 dBm***; 3.5 W @ +27 dBm; 2.5 W @ +23 dBm; 2.0 W @ 0 dBm
Power Consumption when not transmitting
0.32 W
Idle Power Saving Options
Standby: 0.06 W
Sleep: 0.008 W
Shutdown: 0.0003 W

Environment
Certification
USA (FCC 47 CFR Ch. 1 Part 15); Canada (Industrie Canada RSS-210); EU (ETSI EN 302 208 v3.1.1, RED 2014/53/EU)
Operating Temp.
-40°C to +60°C (case temperature)
Storage Temp.
-40°C to +85°C
Shock and Vibration
Survives 1 meter drop during handling

Performance
Max Read Rate
Up to 50 tags/second
Max Tag Read Distance
Over 9 meters (30 feet) with 6 dBi antenna (36 dBm EIRP)

Specifications subject to change without notice.
*Duty cycle restrictions, based on temperature, apply at power levels above +23 dBm
**Will operate below +3.5 V with reduced input line noise immunity
***Best case with good antenna matching

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. 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 the JADAK line of RFID products. www.jadaktech.com