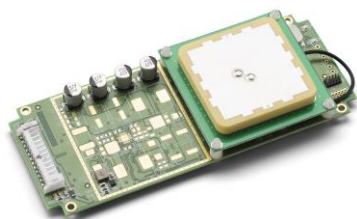# ThingMagic EL6e

122.5 mm L x 50 mm W x 10.5mm H

Features & Benefits:

- Built around proven ThingMagic Nano module

- Highly integrated UHF RFID reader with ARM based Cortex-M4 architecture

- Optional board-mounted antenna with read range up to 2 meters

- Standard options for USB or Serial RS232 interface, and custom configurations for SPI, I2C or RS485

- Pre-loaded Autonomous Workflows simplify integration

- RAIN Communication Interface supports RAIN RFID technology standards

- Support for EPCglobal Gen 2V2 Protocol (ISO 18000-63)

RAIN® RFID Smart Module

ThingMagic EL6e enables easy integration of embedded RFID into OEM designs. Based on the industry-proven ThingMagic Nano module, the EL6e adds interface and operability features that allow engineers to minimize design efforts and quickly embed an RFID module in any application that requires mid- or short-range read distance. The EL6e supports autonomous workflows permitting rapid creation of solutions without RFID expertise nor the use of SDKs and integration tools, and it's among the first products in the market to support a new developer-friendly interface between applications and RAIN RFID readers, the RAIN Communication Interface.

Highlights:

- Speed and ease of integration due to all-in-one embedded solution that includes reader module, antenna (optional), and processor to RFID-enable applications.
- Among the first products in the market to support a new developer friendly interface between applications and RAIN RFID readers – RAIN Communication Interface (RCI)
- Comes pre-loaded with a selection of Autonomous Workflows for the most common use cases. Allows users to operate without RFID expertise, SDKs and integration tools.
- The simplicity of the keyboard emulation mode allows data transfer across multiple platforms, without the need for custom application interface.
- Design is highly configurable and can be customized for unique applications. *Contact JADAK to discuss how EL6e can be tailored to fit your specific application.*

Ideally suited scenarios include:
- Bulk-reading a small set of items, like instruments in a surgical kit
- Reading a specific item but looking for longer range than HF RFID can provide
- Final item verification for inventory or returns processing
- Updating tag information with item usage information
- RFID tag commissioning

Application Areas:

- Medical Equipment for Healthcare and Pharmaceutical Industries
- Kit assembly and returns processing stations
- Access gates in parking garages, ski lift gates, and other applications

Physical	
Dimensions	50 mm (W) x 122.5 mm (L) x 10.5 mm (H) or 15.5 mm with antenna
Mounting Holes	4 mounting holes with 2.5 mm ID

Tag / Transponder Protocols	
RFID Protocol Support	EPCglobal Gen 2V2 (ISO 18000-63)

RF Interface	
Antenna (Optional)	Board-mounted antenna EU or NA frequency range, RHCP, 3 dBi nominal gain
Antenna Connector	U.FL connector for an externally mounted antenna
RF Power Output	Read and write levels adjustable from 0 to +27 dBm in 0.01 dB steps
Region Selections for High Band Freq. Range (915-928 MHz)	FCC (NA, SA), Argentina, Australia, Bangladesh, China, Indonesia, Japan, Korea, Macao, Malaysia, New Zealand, Philippines, Singapore, Taiwan, Thailand
Region Selections for Low Band Freq. Range (865-868 MHz)	ETSI (EU), Hong Kong, India, Russia, Vietnam

Data/Control Interface	
Control/Data Interfaces	USB or RS-232; I2C, SPI, or RS485 available on request
GPIO Sensors and Indicators	4 3.3V GPIO ports: 1 input (sensor), 1 service and 2 output (indicator) lines
User Indicators	2 bi-color LEDs and audio signal

Power	
Power Consumption (Full RF Output Power)	USB Powered: 5VDC +/- 10% at 3.5 W; External Power: 4.5-10 VDC at 4.9 W; 10-26 VDC at 4.4 W
Power Consumption (Not Transmitting)	USB Powered: 5VDC +/- 10% at 1.0 W; External Power: 4.5-10 VDC at 2.4 W; 10-26 VDC at 1.9 W

Regulatory Certifications & Environment	
Certifications	M6E-NANO modular certifications incl. USA (FCC 47 Part 15), Canada (RSS-210), EU (ETSI EN 302 208 v3.1.1, RED 2014/53/EU) & FCC Class A for incidental emissions (EMI)
Safety	IEC/UL 60950-1
Environmental	RoHS, REACH
Temperature	Operating 0°C to +50°C; Storage -40°C to +70°C
Vibration (Without Antenna)	Sinusoidal vibration 1.0" peak to peak displacement 5-14 Hz; 10g acceleration 14-500 Hz, 1.0g from 500-2000 Hz; 30 min linear freq. sweep on 3 axes.

Performance	
Max Read Rate	Up to 65 tags/second
Max Tag Read Distance	Up to 2 m (6 ft) reliant on power availability, antenna choice and tag size

Ordering Information	
PLT-RFID-EL6E-UHF-0-USB	EL6e Embedded Module, USB, No Antenna
PLT-RFID-EL6E-UHF-0-232	EL6e Embedded Module, RS232, No Antenna
PLT-RFID-EL6E-USB-DEVKIT	Development Kit (incl. multiregional USB module, USB cable and Y adapter, EU and NA antennas, sample tags and quick start guide)
PLT-RFID-ANT-EL6E-EU	Antenna Kit, EU region

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.

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.