



MERCURY5e

World-class UHF RFID Engine

Mercury 5e is the embedded version of ThingMagic's best-in-class Mercury 5 RFID reader. About the same size as a PCMCIA Type II PC card, it concentrates Mercury 5's performance into a tiny package so you can design ThingMagic RFID into your own device. It is ideal for adding UHF RFID read/write capabilities to a wide range of devices, from high speed label printing to inline testing to mobile and handheld computers.

Tag / Transponder Protocols	
RFID Protocol Support	EPCglobal Gen 2 (ISO 18000-6C) with Anti-Collision, DRM, and advanced anti-jamming
RF Interface	
Antenna connector	Two MMCX connectors supporting two monostatic antennas, or one bistatic antenna, with VSWR < 1.5:1 @ 50Ω
RF Power Output	Separate read and write levels, command-adjustable from 5 dBm to 30 dBm (1 W), +/-1 dBm accuracy.*
Frequency	Pre-configured for the following regions: FCC (NA, SA) 902-928 MHz ETSI (EU) 865.6-867.6 MHz, 869.85 MHz MIC (Korea) 910-914 MHz SRRC-MII (P.R.China) 920-925 MHz 'Open' (Customizable) 860-960 MHz
Data/Control Interface	
Physical	12-pin ZIF connector providing power, communications signals, and GPIOs
Signaling	Asynchronous Serial interface with 3.3/5V logic levels; baud rates from 9600 to 921,600 bps
GPIO Sensors and Indicators	Two 3.3/5V serial input (sensor) ports and 2 output (indicator) ports
Protocol	Command-response protocol protected by length field and 16-bit CRC.
Physical	
Dimensions	86 mm L x 53 mm W x 5 mm H (3.4 in L x 2.1 in W x 0.2 in H)
Ordering Information	
Module	M5E
Development Kit	M5E-DEVKIT

Power	
DC Power Required	DC Voltage: 5.0 VDC +/- 4% DC power: 3.5 - 6.5W max when transmitting (depends on RF level)
Idle Power Consumption and Command Response Times (Typical Values)	1.13 W with 15 msec response time Power Saving Options: 0.33 W with 20 msec response time 0.08 W with 95 msec response time 0.03 W with 100 msec response time
Environment	
Regulatory	FCC 47 CFR Ch. 1 Part 15 Industrie Canada RSS-21 0 ETSI EN 302 208 ETSI EN 300 220
Operating Temp.	-20C to +60C
Storage Temp.	-40C to +85C
Electrostatic Discharge	10kV to antenna shield conductor with antenna that presents a short to DC
Shock and Vibration	Designed to be installed in host devices which are required to survive 5-foot drops to concrete.
Architecture	
RFID Processor	Intel R1000
User-accessible Flash Memory	16 kB
Tag Buffer	200 tags
Performance	
Max Tag Read Rate	Over 190 tags/second
Max Tag Read Distance	Over 30 feet (9 m) with 6 dBi antenna (36 dBm EIRP)

*With an absolute maximum of +30 dBm. Maximum power may have to be reduced to meet regulatory limits, which specify the combined effect of the module, antenna, cable, and enclosure shielding of the integrated product. Specifications subject to change without notice. ©2008 ThingMagic, Inc. ThingMagic, Mercury and The Engine in RFID are registered trademarks of ThingMagic, Inc. Other marks may be protected by their respective owners. More information about ThingMagic products at www.thingmagic.com

