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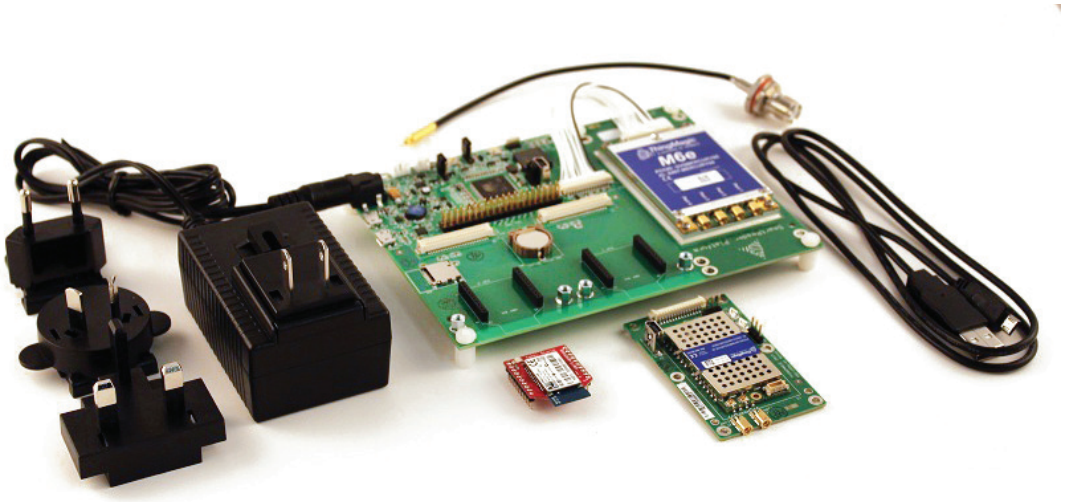

Mercury xPRESS Sensor Hub

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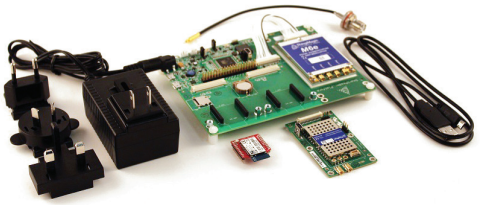

Hardware prototype kit above. Platform includes reference design files and xPRESS SDK (downloadable).

The Mercury® xPRESS Sensor Hub is a flexible development platform designed to enable customers to rapidly create cost effective finished reader products. It combines a microcontroller-based motherboard with ThingMagic's embedded RFID technology and an integrated software development environment built on ThingMagic's Mercury C API. Mercury xPRESS maintains a single unified software interface, allowing developers to consume diverse sensor data and acts as a "Sensor Hub" for a range of transport interfaces and communication plug-ins in a single platform. Delivered as an extensible development environment with reference design files and pre-defined, use case specific workflows, Mercury xPRESS Sensor Hub allows developers to move seamlessly across technologies as the use case demands.

Mercury xPRESS Sensor Hub Advantages

- Extensible development platform including SDK and sample applications plus hardware and software reference designs
- End users can collect, manage and analyze complex sensor and ID information faster and easier
- Screened for regulatory compliance, reducing cost and time to secure needed end product certifications

Physical - Hardware Prototype Kit

Dimensions	114.3 mm L x 152.4 mm W x 25.4 mm H (4.5 in L x 6.0 in W x 1 in H)

Components of Platform

Hardware prototype kit	• ARM microcontroller-based motherboard with integrated RFID module • Universal AC power adapter • Antenna adapter cable • USB cables (2) • Quickstart Guide: details links to access hardware reference design files
Software Development Tools (downloadable)	• xPRESS SDK • Sample applications (Keyboard Wedge sample application is pre-loaded into memory)
Hardware Reference Design and Manufacturing Files (downloadable)	• Schematics in OrCAD Capture v15.7 tool format (file extension .DNS) • PDF printouts of schematics • Bill of Material (BOM) in Excel format • PCB design file in OrCAD Layout v15.7 tool format (file extension .MAX) • GERBER files (PCB layers, manufacturing plots) • Board assembly views, top and bottom, in PDF format

Environment - Hardware Prototype Kit

Certification	• FCC 47 CFR Ch. 1 Part 15 • ETSI EN 302 208 v1.4.1
Operating Temp.	-20C to +60C (case temperature)
Storage Temp.	-40C to +85C

Physical Interfaces - Hardware Prototype Kit

USB Control/ Data Interfaces	• USB 2.0 Micro-B jack for debugging • USB OTG Micro-AB jack for control and communication • USB 2.0 Mini-B jack for direct access to module USB interface
MCU break-out Interfaces	• 10-pin J-Tag connector for firmware upgrade and debug • Two 51-pin Hirose DF9 series communication interface connectors • 40-pin test connector
Power Interfaces	• Co-axial 5V input jack • Two-pin Li-ion jack - JST PH2 type • Three-pin Li-ion jack - JST PH3 type
Standard Accessory Interfaces	• Two 20-pin xBee connectors for transport interface modules • Micro-SD card connector (future use)
Push-button Controls	• On/Off switch • Reset switch • User-programmable switch
LED Indicators	• Power LED (Red) • Battery Status LED (Green) • User-programmable LEDs (Blue, Yellow, Green)

Power - Hardware Prototype Kit

Power Source	• Universal power adapter - 100-240 V, 50/60 Hz, 0.58 A max (Included) • Optional battery powered - 2-pin Li-ion or 3-pin Li-ion battery with NTC (not included)

Platform - Hardware Prototype Kit

xPRESS SDK	• Debug console for error logs and monitoring • Built on Mercury C API with FreeRTOS • Uses standard GCC tool chain • Uses Atmel Software Framework • Uses standard open source tools • Supports M6e, Micro and Micro-LTE modules • Includes sample applications with common use case • xPRESS software suite update to support basic network communication
Operating System	FreeRTOS
Processor	ATMEL AT91SAM3A8C

Specifications subject to change without notice

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Mercury6e Series High Performance Multi-Protocol Embedded UHF RFID Modules

Available in multiple configurations, ThingMagic RFID modules provide the easiest and most cost effective way to add RFID to your product or solution. The Mercury xPRESS Sensor Hub supports the entire ThingMagic Mercury6e Series of embedded UHF RFID modules.

World's highest performance small form factor UHF RFID Modules	 **M6e**	 **Micro**	 **Micro-LTE** (Low Tag-read Enabled)
Antenna Ports	4	2	2
Read Rate (tag/sec)	750	750	50
Read Range	30ft	30ft	30ft
Power dBm	5 to 31.5	-5 to 30	-5 to 30

Module Specifications	
WiFi module (Roving Networks RN171XV)	• Integrated PCB antenna • Configurable transmit power: 0 to +12dBm • Ultra low power: 4 uA sleep, 40 mA Rx, 180 mA Tx at 10dBm • Complete TCP/IP networking stack; TCP server or client, UDP or HTTP client • WiFi Alliance certified for WEP, WPA, and WPA2-PSK • Download the datasheet here: **http://ww1.microchip.com/downloads/en/DeviceDoc/rn-171-xv-ds-v1.04r.pdf**
Bluetooth Module (Roving Networks RN42XV)	• Integrated dipole antenna with a range up to 20 meters • Fully qualified Bluetooth version 2.1 Class 2 Module • Supports version 2.1+ Enhanced Data Rate • Low power: 26 uA sleep, 3 ma connected, 30 mA transmit • Multiple embedded stack profiles: SPP, HID, GAP, SDP, RFCOMM, and L2CAP • Download the datasheet here: **http://ww1.microchip.com/downloads/en/DeviceDoc/RN41XV-RN42XV-ds-v1.0r.pdf**
GPS Module (SkyNav SIKM58)	• Integrated ceramic patch antenna • NMEA Interface protocol • Ultra high sensitivity: -165 dBm Tracking, -148 dBm Acquisition • Low Power: 40 mA Tracking, 45 mA Acquisition • GPS system support: WAAS/EGNOS/MSAS/GAGAN and A-GPS • Download the datasheet here: **http://store.linksprite.com/gps-bee/**
PoE Module (ThingMagic Proprietary)	• Supports 10/100 Mbps Ethernet with Auto Negotiation • Powered by xPRESS board, or Powers xPRESS board via Ethernet interface • 802.3at Class 0 Type 1 compatible. • Can supply 2.2A at 5V (11 W) to xPRESS board supporting maximum RF module power levels. • Complete TCP/IP networking stack; TCP server or client, UDP or HTTP client • Supports TCP, UDP, IPv4, ICMP, ARP, IGMP, DHCP and PPoE protocols • GPS system support: WAAS/EGNOS/MSAS/GAGAN and A-GPS • Download the datasheet here: **http://www.thingmagic.com/images/pdfs/PoE-final.pdf**

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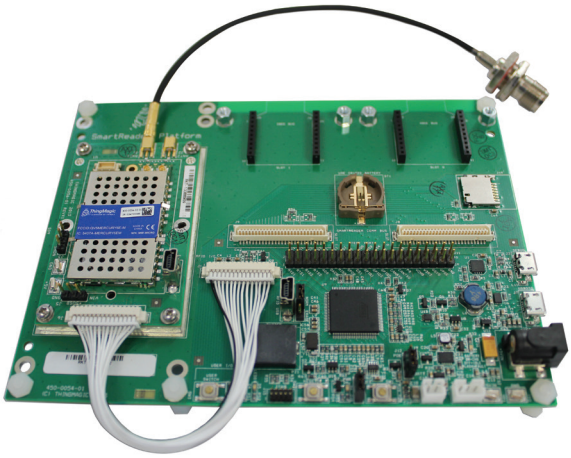
Ordering Information	
XP6e	xPRESS development platform with M6e RFID module
XP6e-M	xPRESS development platform with Micro RFID module
XP6e-Micro	xPRESS development platform with Micro-LTE RFID module
XP-BT	xPRESS plug-in Bluetooth interface module (optional)
XP-PoE	xPRESS plug-in POE interface module (optional)
XP-WiFi	xPRESS plug-in WiFi interface module (optional)
XP-GPS	xPRESS plug-in GPS module (optional)
Optional Accessories	• RFID antennas • RFID tags

For more information on Mercury xPRESS Sensor Hub and to read our full library of product documentation, please visit **http://www.thingmagic.com/index.php/manuals-firmware**



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