August 3, 2009

Microchip Introduces 100 Mbps Ethernet Controllers With Integrated Security Engines to Enable Fast and Secure Embedded Connectivity

Low-Cost ENC624J600 10/100Base-TX, MAC & PHY Ethernet Controllers Provide Cryptographic Security Hardware and Factory Preprogrammed MAC Addresses

CHANDLER, Ariz.--(BUSINESS WIRE)-- Microchip Technology Inc.(NASDAQ:MCHP), a leading provider of microcontroller and analog semiconductors, today announced the low-cost ENC624J600 standalone, IEEE 802.3(TM) compliant, 100 Mbps Ethernet interface controllers. These Ethernet controllers combine a 10/100Base-TX physical interface (PHY) and a Media Access Controller (MAC) with a hardware cryptographic security engine, and can connect to any PIC(R) microcontroller via an industry-standard Serial Peripheral Interface (SPI) or a flexible parallel interface. Additionally, each device has a unique, factory-preprogrammed MAC address and 24 Kbytes of configurable SRAM for packet transmit/receive buffering and data storage. This combination of speed, flexibility and features enables designers to create fast, secure network- and Internet-connected embedded applications with minimized board space, cost and complexity.

To see a block diagram of the ENC624J600, visit: http://www.flickr.com/photos/microchiptechnology/3776021137/sizes/o/in/set-72157621784690403/

Demand is on the rise for embedded applications with higher-speed data connectivity, and Ethernet is the leading networking technology. By adding Ethernet connectivity to an embedded system, microcontrollers can be used to distribute data over a network and can be controlled remotely. Ethernet's infrastructure, performance, interoperability, scalability and ease of development have made it an ideal choice for embedded communications.

"The ENC624J600 Ethernet controllers are well equipped for a wide range of embedded applications that require fast and secure data communications," said Mitch Obolsky, vice president of Microchip's Advanced Microcontroller Architecture Division. "With the introduction of these Ethernet controllers, a whole new class of microcontroller-based applications can be cost-effectively connected to local and global networks."

Many embedded applications require added security to ensure that only the intended users can gain access to monitor and control a remote network application. The ENC624J600 controllers integrate hardware cryptographic security engines that perform RSA, Diffie-Hellman, MD5 and SHA-1 algorithm computations in support of cryptographic protocols such as SSL/TLS, SSH and various VPNs. These integrated hardware features enable secure

data transmissions with reduced code size, faster connection establishment and throughput, and reduced firmware development efforts.

Each ENC624J600 controller has a unique, factory preprogrammed Ethernet MAC address, which is required for every Ethernet device. This simplifies the design and manufacturing process by eliminating the cost of buying an Organizationally Unique Identifier (OUI) from the IEEE, and the time required to perform serialized MAC address programming during manufacturing.

The configurable, 24 Kbyte SRAM buffer memory provides a flexible, reliable data-management system that enables an efficient method for packet storage, retrieval and modification that reduces memory requirements for the host microcontroller.

The support of both serial SPI and flexible parallel interfaces to any host microcontroller provides maximum flexibility for end designers to balance the end-system performance vs. cost. With an SPI interface, only four pins are required to connect to the microcontroller, enabling the use of smaller MCU packages for space-constrained applications.

Microchip offers a TCP/IP stack that can be used for free with any of its 8-, 16- or 32-bit PIC microcontrollers or dsPIC(R) digital signal controllers. The stack includes Secure Sockets Layer (SSL) encryption and a TCP/IP Configuration Wizard to simplify the configuration of Ethernet projects. Additionally, the Stack utilizes the industry-standard SSLv3 protocol to secure any TCP connection, while building in support for the HTTP Web server and SMTP e-mail client modules.

Example applications that can take advantage of the ENC624J600 Ethernet controller include: entertainment (Internet radios); telecommunications (VoIP phone adapters); inventory management (vending machines, hotel mini bars); remote diagnostics/alerts (appliances, factory machines, POS terminals, power supplies, servers/networks); security (asset monitoring, fire and safety, security panels, access control, fingerprint recognition); remote sensing/actuators (industrial control/automation, lighting control, environmental control).

Development Tools

Owners of the Explorer 16 development board, which is used for development with all of Microchip's 16- and 32-bit PIC microcontrollers, or the PIC18 Explorer board, which is used with the PIC18 high-end 8-bit family of MCUs, can purchase a $49.99 Fast 100 Mbps Ethernet PICtail(TM) Plus daughter board (part # AC164132). This daughter board contains an ENC624J600, and an RJ-45 jack to enable development of embedded Ethernet applications. All of Microchip's Ethernet products, tools, documentation and other design resources can be found on the Company's online Ethernet Design Center, located at: http://www.microchip.com/Ethernet.

Availability & Pricing

Both ENC624J600 Ethernet controllers are available now for general sampling and volume production, with prices starting at $2.49 each in 10,000-unit quantities. The 44-pin package options for the ENC424J600 are: QFN and TQFP. The 64-pin package option for the ENC624J600 is: TQFP. For additional information, contact any Microchip sales representative or authorized worldwide distributor, or visit Microchip's Web site at http://www.microchip.com/Ethernet.

About Microchip Technology

Microchip Technology Inc. (NASDAQ:MCHP) is a leading provider of microcontroller and analog semiconductors, providing low-risk product development, lower total system cost and faster time to market for thousands of diverse customer applications worldwide. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at http://www.microchip.com.

High-res Photos and Block Diagram Available Through Flickr or Editorial Contact:

- Product Photo:http://www.flickr.com/photos/microchiptechnology/3776827566/sizes/o/in/set-72157621784690403/
- Block Diagram:http://www.flickr.com/photos/microchiptechnology/3776021137/sizes/o/in/set-72157621784690403/
- Tool Photo:http://www.flickr.com/photos/microchiptechnology/3776022241/sizes/o/in/set-72157621784690403/

Tags / Keywords: Ethernet, Internet, Connectivity, Embedded Ethernet, Security, 10/100, 100 Mbps, 10/100Base-TX, Cryptographic, Security Engine, Microcontroller, PIC, dsPIC

RSS Feed for Microchip Product News: http://www.microchip.com/RSS/recent-PRProduct.xml

Source: Microchip Technology Inc.