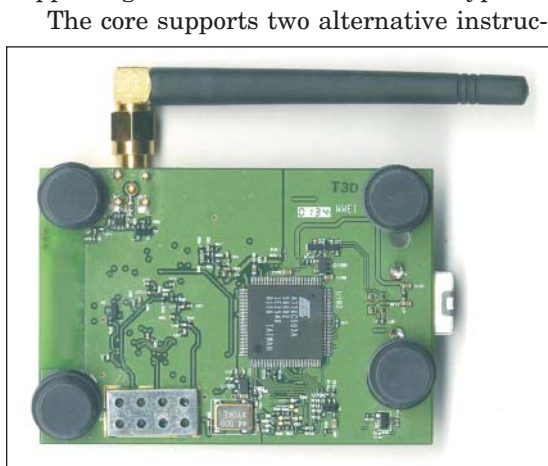# Media Access Controller Provides a Complete WLAN Interface

This single-device controller for WLAN MAC operations supports direct-sequence and frequency-hopping physical layer interfaces for IEEE 802.11b 11 Mbps and other high performance WLAN transmission formats

Atmel Corporation offers a universal Media Access Controller (MAC) for wireless LANs, focusing on the IEEE 802.11b standard, but also supporting other WLAN protocols. The AT76C503A, provides a "glueless" interface conforming to the 12-Mbit Universal Serial Bus (USB) specification and can control a variety of wireless physical interfaces.

The chip contains a USB interface, a MAC control unit, and a Physical Attachment Interface (PAI). The PAI supports 5.5- and 11-Mbit WLAN physical interfaces and IEEE 802.11 (1 or 2 Mbps) direct-sequence spread spectrum and frequency hopping spread spectrum interfaces. The device also integrates Wired Equivalent Privacy (WEP) in hardware, supporting both 64-bit and 128-bit encryption.

The core supports two alternative instruc-

tion sets. Powerful 32-bit code can be executed by the processor in the ARM® operating mode; however, a 16-bit instruction subset is also available in Thumb® mode. Thumb mode can be selected to exploit full processor power with limited external memory resources. Note that the ARM7TDMI operating mode can be changed at run time with negligible overhead.

The SRAM interface supports up to 1 Mbyte of external memory, and the Flash memory interface supports up to 1 Mbyte of nonvolatile memory for permanent storage of program code. Internal SRAM is 6k × 32-bit, used for fast program code execution and temporary data storage.

The chip is provided in a 128-lead 14 × 14 mm TQFP package and operates from a 3.3 volt supply.

Atmel Corporation
Tel: 408-441-0311
Fax: 408-487-2600
E-mail: literature@atmel.com
www.atmel.com
HFeLink 312

An evaluation kit is available to examine "on the air" operation of the AT76C503A.