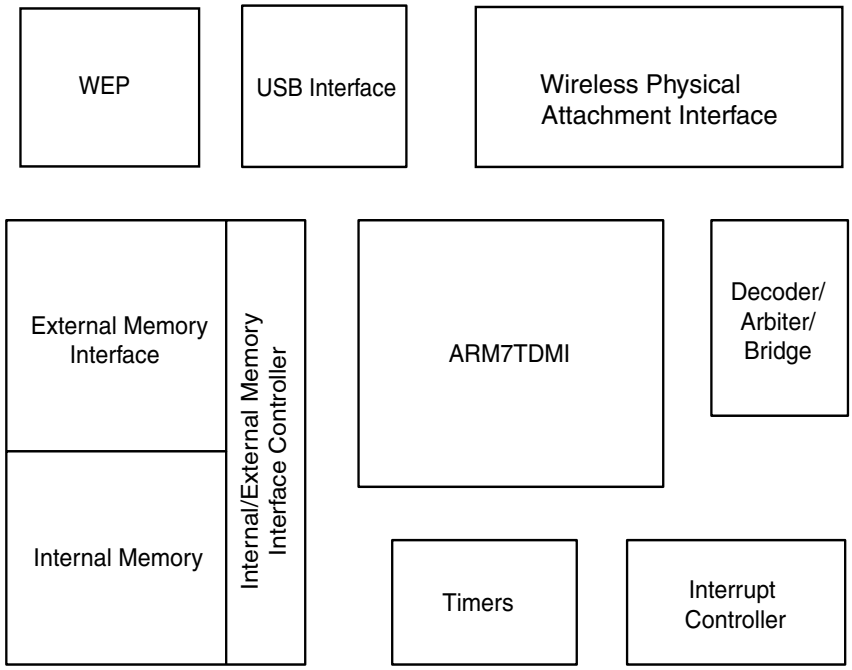
Features

- **IEEE 802.11b-compliant Wireless Standard**
- **Wireless LAN MAC Unit with ARM7TDMI™ RISC Processor**
- **Integrated 128-byte Transmit and 128-byte Receive FIFOs, for Wireless MAC Layer Functions**
- **Delivers Standard Wireless Networking to Any Host that Supports a Full-speed (12 Mbps) USB Interface**
- **Glueless SRAM Interface for All MAC Operations, Supporting up to 1M Byte of External Memory**
- **Integrated 6K x 32-bit Internal SRAM, Used for Fast Program Code Execution and Temporary Storage of Data**
- **Glueless Flash Memory Interface, Supporting up to 1M Bytes of Nonvolatile Memory for Permanent Storage of Program Code**
- **Wired Equivalent Privacy (WEP) in Hardware Supporting 64-bit and 128-bit Encryption**
- **The Integrated Physical Attachment Interface (PAI) Fully Supports Direct-sequence Spread Spectrum and Frequency-hopping Spread Spectrum Physical-layer Interfaces**
- **The WLAN and Inter-networking Functions can be Changed and Updated Easily to New Requirements Since They are Implemented in Micro Code**
- **Supports 11 Mbps Data Rate with Automatic Fallback to 5.5, 2 and 1 Mbps**
- **128-lead, 14 x 14 mm TQFP Package**
- **Low-voltage Operation (3.3V)**
- **Internal ROM Contains Hardwired USB Control Software for Automatic Configuration when Card is Inserted in the USB Slot**
- **Device Firmware Upgrade is also Included in the Internal ROM for Downloading Firmware into Internal SRAM**
- **Offers SPI Interface and Five GPIO Pins**
- **AT76C503A Offers the Option to Download the Whole Code from SPI Flash**

Block Diagram



Universal Serial Bus 11-megabit WLAN Media Access Controller

AT76C503A

Summary

Rev. 1949CS–WLAN–06/02

Note: This is a summary document. A complete document is available under NDA. For more information, please contact your local Atmel sales office.

Description

AT76C503A is a single-chip controller that provides all processing and functionality needed for the MAC protocol of wireless LANs (focusing on, but not limited to the IEEE 802.11b standard). AT76C503A provides a glueless interface conforming to 12-Mbit Universal Serial Bus (USB) specification and can control a variety of wireless physical interfaces.

The AT76C503A chip contains a USB interface, a MAC control unit, and a PAI. The PAI supports 5.5- and 11-Mbit WLAN physical interfaces and the IEEE 802.11 (1 or 2 Mbps) direct-sequence spread spectrum and frequency-hopping spread spectrum physical interfaces, providing flexibility to end users.

The ARM7TDMI core supports two alternative instruction sets. Powerful 32-bit code can be executed by the processor in 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 ARM7TDMI operating mode can be changed at run time with negligible overhead.

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