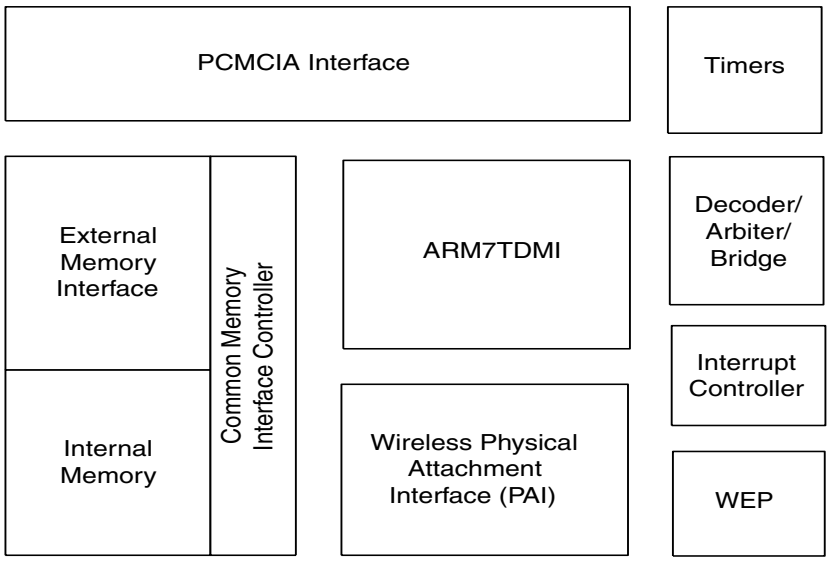
Features

- **Wireless Interface Following the IEEE 802.11b Standard**
- **Wireless LAN MAC Unit with ARM7TDMI™ RISC Processor**
- **Integrated 128-byte Transmit and 128-byte Receive FIFOs for Wireless MAC Layer Functions**
- **16-bit PCMCIA Bus 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 Byte of Nonvolatile Memory for Permanent Storage of Program Code**
- **Enciphering/Deciphering of Wireless Data On-the-fly by the Implementation of the Encryption/Decryption Code Ensures Maximum Privacy of Data**
- **The Integrated Physical Attachment Interface (PAI) Fully Supports Direct-sequence Spread Spectrum and Frequency-hopping Spread Spectrum (2 Mbps) Physical-layer Interfaces**
- **The WLAN and Inter-networking Functions can be Changed and Updated Easily to New Requirements Since They are Implemented in Microcode**
- **Supports 11 Mbps Rates with Automatic Fallback to 5.5, 2 and 1 Mbps**
- **144-lead TQFP Package**
- **Low-voltage 3.3V Operation**
- **Internal ROM Contains Hardwired CIS Information for Automatic Configuration when Card is Inserted in the PCMCIA Slot or Reads Custom CIS Information from SPI Memory**
- **Offers SPI interface and 3 GPIO Pins**
- **AT76C502A Offers the Option to Download the Whole Code from SPI DataFlash® or an Option to Eliminate Flash by Downloading the Program from the Mass Storage Device**

Block Diagram



11-megabit WLAN Media Access Controller (MAC)

AT76C502A

Summary

Rev. 1948CS–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

Fast VirtualNet™ (AT76C502A) 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). AT76C502A provides a glueless interface conforming to PC Card 95 and can control a variety of physical interfaces.

The AT76C502A chip contains a PCMCIA bus interface, a MAC control unit and a physical attachment interface (PAI). The PAI supports direct-sequence spread spectrum and frequency-hopping spread spectrum (2 Mbps) 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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