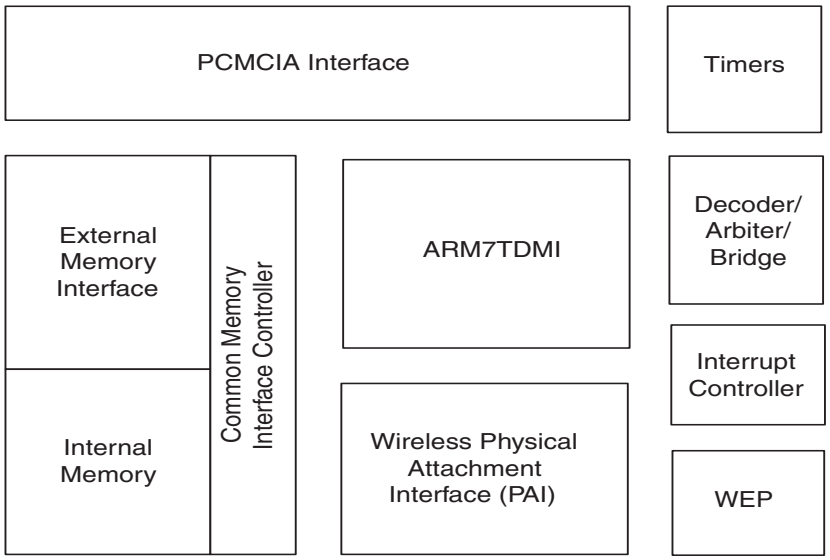
Features

- 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

1948DS–WLAN–09/03

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

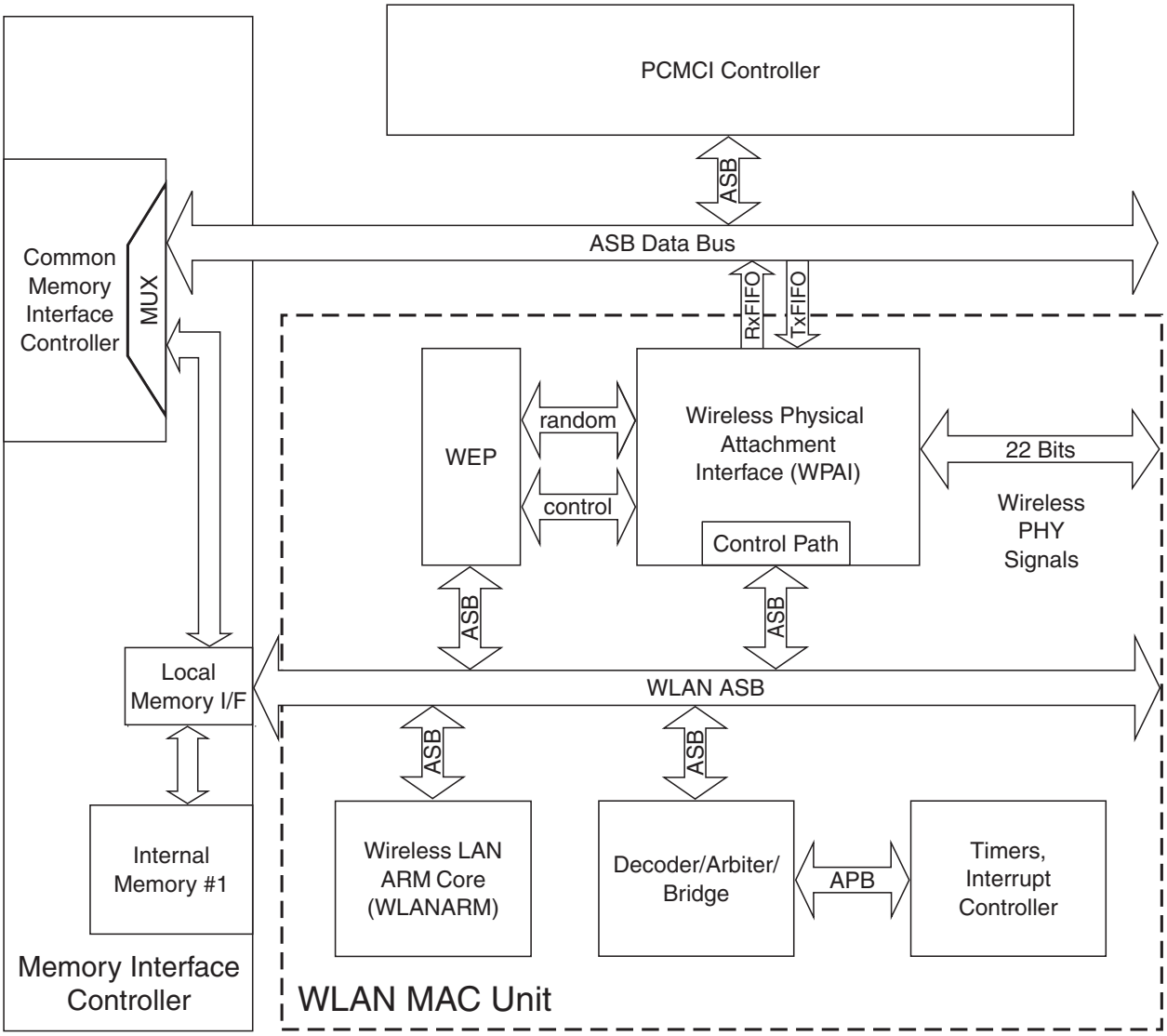
Description

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.

Functional Diagram



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