

# WiLD™ 802.11a/b/g MAC

IEEE 802.11a/b/g MAC Controller and Protocol Software for integration into Wireless LAN standard ICs and ASICs.

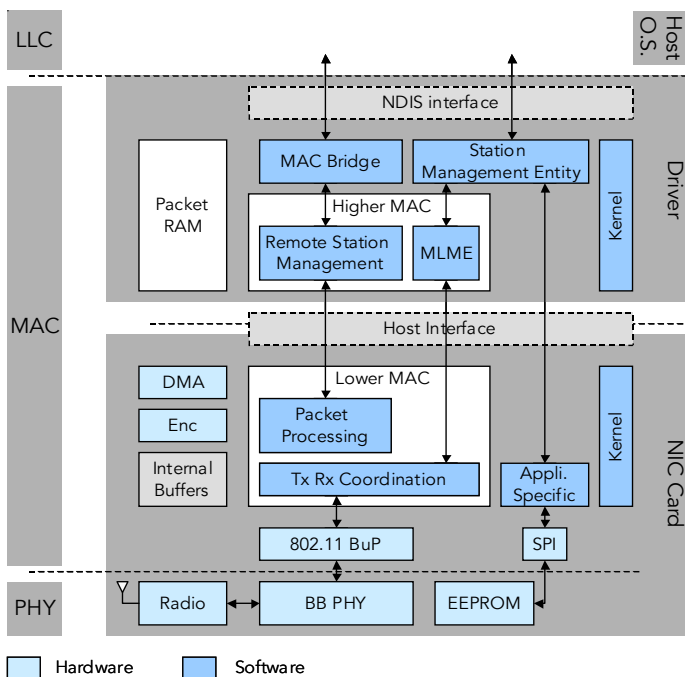
## Key Design Features

- Compliant to IEEE 802.11a, b, g
- Multi-mode capability
- Flexible architecture, prepared to support upcoming standard extensions like QoS (802.11e), Security (802.11i), Bluetooth 2
- Throughput approaches theoretical limit
- Data rates up to 11 Mbit/sec (802.11b) and 54 Mbit/sec (802.11a, 802.11g)
- System Design:
  - Closed subsystem = guaranteed performance
  - Extremely small additional load on system host processor
- ARM7 based flexible platform
  - Software configurable
  - Easy addition of ARM AMBA bus peripherals
  - Simple bridging interface to the main system
  - Easy upgrade of protocol software
- High throughput backbone 320 Mbit/s @ 80 MHz
- Low Gate count: 120 K logic gates
- Power Down and Sleep modes implemented in Hardware and Software

- Embedded memory: 128 KB single port SRAM typ. for NIC Card
- Built-in encryption: WEP (unlimited key length) and 802.11i (TKIP and AES) with hardware acceleration
- Included standard interfaces:
  - PCI, Mini PCI, CardBus, SPI, 16550 UART
- Easy addition of third party interfaces such as USB, IEEE 1394 etc.
- External Flash memory interface
- Software features:
  - Available in standard ANSI C
  - SDL models on request
  - DCF supported, HCF for 802.11e, PCF on request
  - Source code license
  - NIC Card Demo application for WindowsXP
  - Optimized interface between MAC hardware and protocol software

## IP Package Features

- Designed in synthesizable VHDL for easy technology migration
- Optimized interface to WiLD 802.11a Modem and WiLD 802.11b Modem
- Designed for easy integration into an ASIC
- DFT ready for use with major ATPG tools
- Turnkey IC design and IP integration service available on request
- Supplied selection of scripts:
  - VHDL compilation
  - Synthesis
  - Test insertion
- Supplied with test bench suite permitting re-verification of core after user modifications
- Comprehensive documentation and training
- Portable to embedded processors other than ARM on request





### Integration into a WLAN ASIC

The WiLD 802.11a/b/g MAC is designed for integration into an ASIC using standard CMOS technology. A WLAN ASIC could host further application specific logic as well as modems (e.g. WiLD 802.11a/b/g Modems) and/or RF cores (e.g. WiLD CMOS Radios).

### Validation Platform

A dedicated FPGA based Rapid Prototyping platform (WiLD Card I) is available for IP customers. It can be used for:

- HW prototyping
- SW development
- Pre-Silicon application software development
- Joint HW/SW debug
- System validation
- System demonstration

### Applications

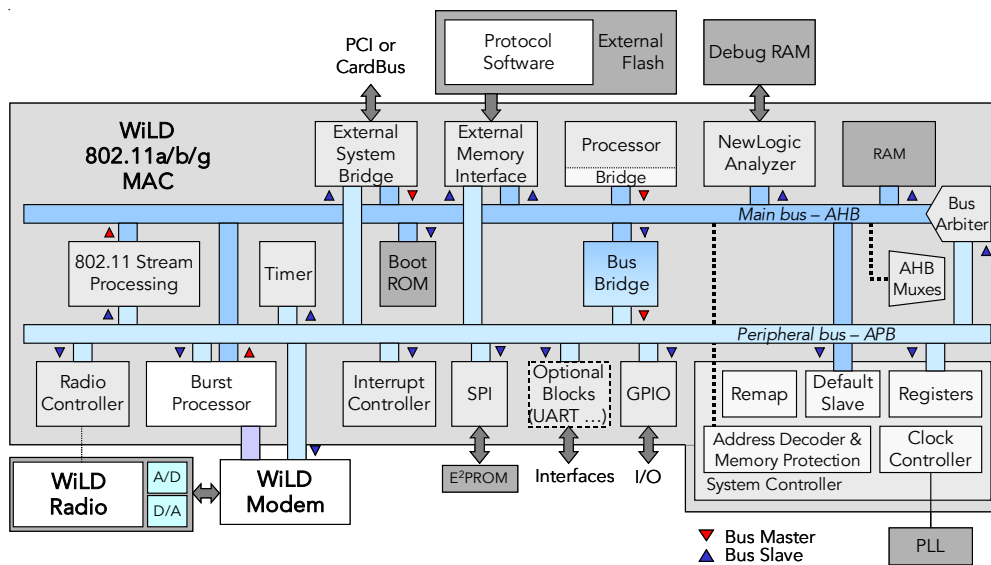
WiLD IP can be implemented in PC hosted and embedded solutions for WLAN technology, such as:

- Network Interface Cards (NICs)
- Access Points (APs)
- Home networking devices
- Consumer electronics, Audio, Video, Games
- Wireless Terminals

### Interfacing to the WiLD 802.11a/b/g MAC

For communication with the host processor standard interfaces are implemented (PCI, miniPCI, CardBus). Other interfaces like IEEE1394 (Firewire) or USB can be easily integrated on request.

WLAN physical layer components are connected to the WiLD 802.11a/b/g MAC by the Burst Processor (BuP) and an ARM AMBA bus interface.



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