



W89C33D Product Brief

PCI/CardBus 802.11a/b/g WLAN MAC & Baseband Controller

GENERAL DESCRIPTION

The W89C33D integrates an 802.11a/b/g compliant Wireless LAN Media Access Controller, the corresponding baseband modulation/demodulation functions, and a PCI 2.2 compliant host interface. The W89C33D also includes 802.11 compliant WEP (40- and 104-bit) and 802.11i compliant TKIP and AES security engines.

When combined with a compatible RF transceiver, the W89C33D can be used to make low cost wireless access cards.

FEATURES

System Configuration

- ◆ 32-bit, 33MHz PCI 2.2 host interface
- ◆ Glueless radio interface to a variety of RF transceivers, such as Maxim MAX282x, the Airoha AL223x, AL7230, and others
- ◆ EEPROM interface supports 93C56 for storing CIS information and PCI configuration data
- ◆ LED interface for Connectivity/ Activity and Power-Up status
- ◆ Wake on WLAN functionality

Wireless Network Interface

- ◆ 802.11a/g OFDM supports data rates up to 54 Mbps, including 48, 36, 24, 18, 12, 9, and 6 Mbps
- ◆ 802.11b CCK supports data rates up to 11 Mbps, including 5.5, DSS 2 and 1 Mbps DBPSK, DQPSK
- ◆ Supports 802.11g ERP long preamble PPDU, ERP short preamble PPDU and ERP OFDM PPDU
- ◆ Embedded WEP (40- or 104-bit) and 802.11i compliant TKIP and AES engines for enciphering/ deciphering of wireless data
- ◆ 802.1X authentication support
- ◆ Smart Roaming between 802.11a, b, and g networks
- ◆ Site Survey Function for 2.4 and 5GHz bands
- ◆ Non-ERP, legacy 802.11b station detection

- ◆ Packet-Burst mode to boost throughput with any AP
- ◆ Interference avoidance and rate adaptation
- ◆ Multipath immunity for delay spreads up to 200ns in OFDM modes
- ◆ Multipath immunity for delays up to 500ns CCK modes
- ◆ Baseband modulation and demodulation operates with a 20 or 40MHz clock input

Host Interface

- ◆ Compliant with PCI 2.2 specification
- ◆ PCI Power Management 1.1
- ◆ Supports 32-bit miniPCI interface
- ◆ Supports 32-bit CardBus interface

Manufacturing Process

- ◆ 0.18 μ m CMOS process
- ◆ 3.3V I/O and 1.8V core

Packaging Technology

- ◆ Low-cost, 128-pin LQFP package

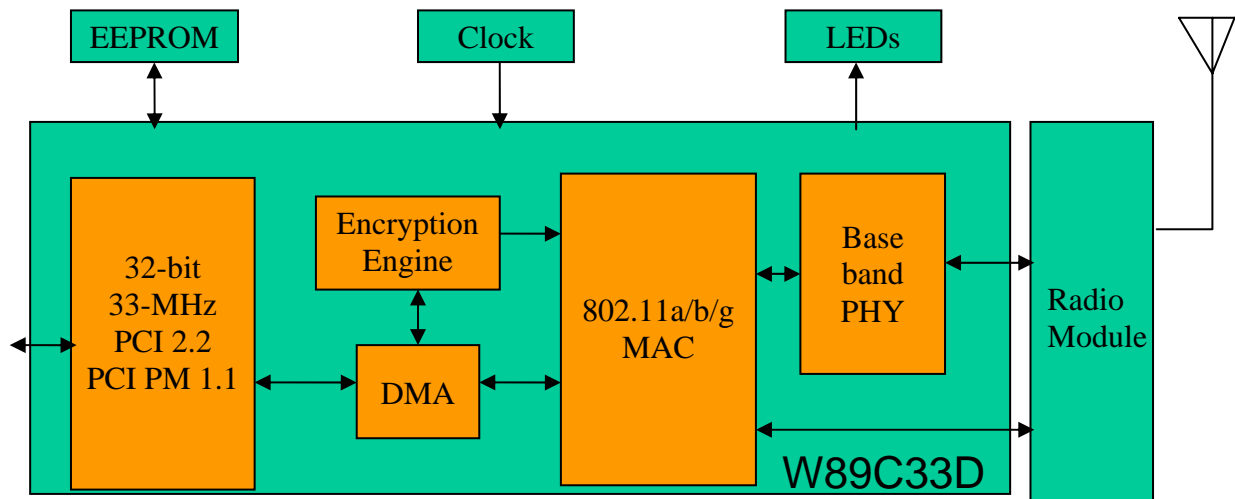
Reference Design Kit

- ◆ Turn-Key Manufacturing ready
- ◆ Schematics (PDF and OrCAD)
- ◆ BOM
- ◆ Board layout (Gerbers)
- ◆ Evaluation board

Software Driver and Utility Package

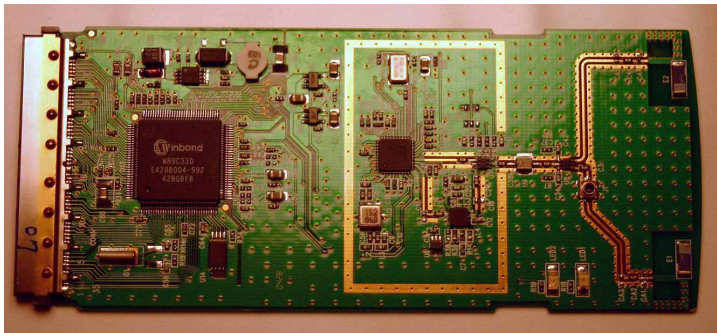
- ◆ Windows 2000, XP, XP 64-bit
- ◆ Windows CE 5.0
- ◆ Linux 2.4.x

SYSTEM BLOCK DIAGRAM



Applications

- ◆ CardBus Wireless LAN Adapters
- ◆ MiniPCI Wireless LAN Adapters
- ◆ PCI Wireless LAN Adapters
- ◆ Embedded



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