Features

- High-performance non-PCI local bus
  - Supports both 8 bit and 16 bit local CPU interfaces include MCS-51 series, 80186 series CPU and ISA bus
  - SRAM-like host interface (US Patent Approval), easily interfaced to most common embedded MCUs
  - Embeds 8Kx16 bits SRAM for packet buffers
  - Supports Slave-DMA to minimize CPU overhead
  - Supports burst-mode read for highest performance applications
  - Interrupt pin with programmable Hold-off timer
- Single-chip Fast Ethernet controller
  - Compatible with IEEE802.3, 802.3u standards
  - Integrates Fast Ethernet MAC/PHY transceiver in one chip
  - Supports 10Mbps and 100Mbps data rate
  - Supports full and half duplex operations
  - Supports 10/100Mbps N-way Auto-negotiation operation
  - Supports twisted pair crossover detection and auto-correction (HP Auto-MDIX)
  - Supports IEEE 802.3x flow control for full-duplex operation
  - Supports back-pressure flow control for half-duplex operation
  - AX88196B provides optional MII interface for external 100Base-FX Ethernet PHY, HomePNA PHY or HomePlug PHY
- Supports Wake-on-LAN function to reduce power by following events
  - Detection of a change in the network link state
  - Receipt of a Magic Packet
  - Receipt of a MS wakeup frame
- NE2000 register level compatible instruction
  - Detection performance can be enhanced with only a minor host driver modification from original NE2000 driver
- Supports EEPROM interface to store MAC address (Optional)
- Supports up to 2 (out) /1 (in/out) General Purpose pins
- Supports LED pins for various network activity indications
- Integrates on-chip 3.3V to 1.8V voltage regulator and require single power supply of 3.3V only
- Integrates on-chip oscillator and PLL. Require only one 25Mhz crystal to operate
- Small form factor with 64-pin LQFP (AX88796B) / 100-pin LQFP (AX88196B) RoHS compliant package
- Operating temperature range: 0 to +70 °C or -40 to +85 °C

Product Brief

Product Description

The AX88796B is a low-pin-count (64-pin LQFP) non-PCI Ethernet controller for the Embedded and Industrial Ethernet applications. The AX88196B is a non-PCI Ethernet controller with MII for the Embedded Ethernet applications. The AX88796B/AX88196B supports 8/16-bit SRAM-like host interface, providing a glue-less connection to most common embedded MCUs. The AX88796B/AX88196B integrates on-chip Fast Ethernet MAC and PHY, which is IEEE802.3 10Base-T and IEEE802.3u 100Base-TX compatible, and 8Kx16 bits embedded SRAM for packet buffering to accommodate high bandwidth applications. The AX88796B/AX88196B has a wide array of features including support for HP Auto-MDIX, Wake-on-LAN power management, and IEEE 802.3x and backpressure flow control. The AX88796B/AX88196B supports two operating temperature ranges, namely, commercial temperature range from 0 to 70 °C and industrial temperature range from -40 to 85 °C. The small form factor of AX88796B 64-pin LQFP package helps reduce the overall PCB space. The programming of AX88796B/AX88196B is simple and compatible with NE2000, so the users don't need any modification and can easily port the software drivers to many embedded systems very quickly. Combining these features with ASIX's free TCP/IP software stack for 8-bit microcontrollers, AX88796B/AX88196B provides the best Ethernet solution for embedded networking applications.

Target Market

The AX88796B/AX88196B is targeted at a wide range of embedded applications.

- Home appliances, portable devices, factory/building automation, industrial equipments, security systems, remote control/monitoring/management, and streaming media applications such as :
  - POS, WLAN AP, Broadband Router, IP Camera, content distribution, VoIP, IP STB, digital video recorder, DVD recorder/player, high definition TV, digital media client/server, home gateway, and IPTV, etc

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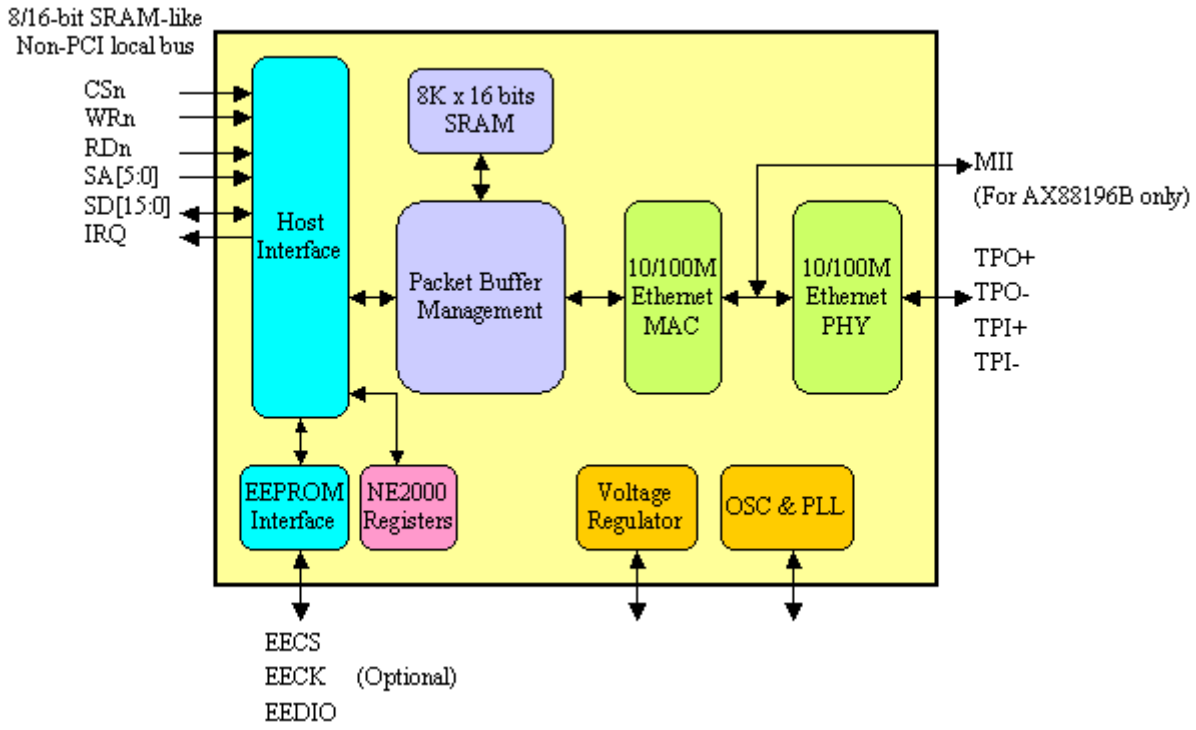
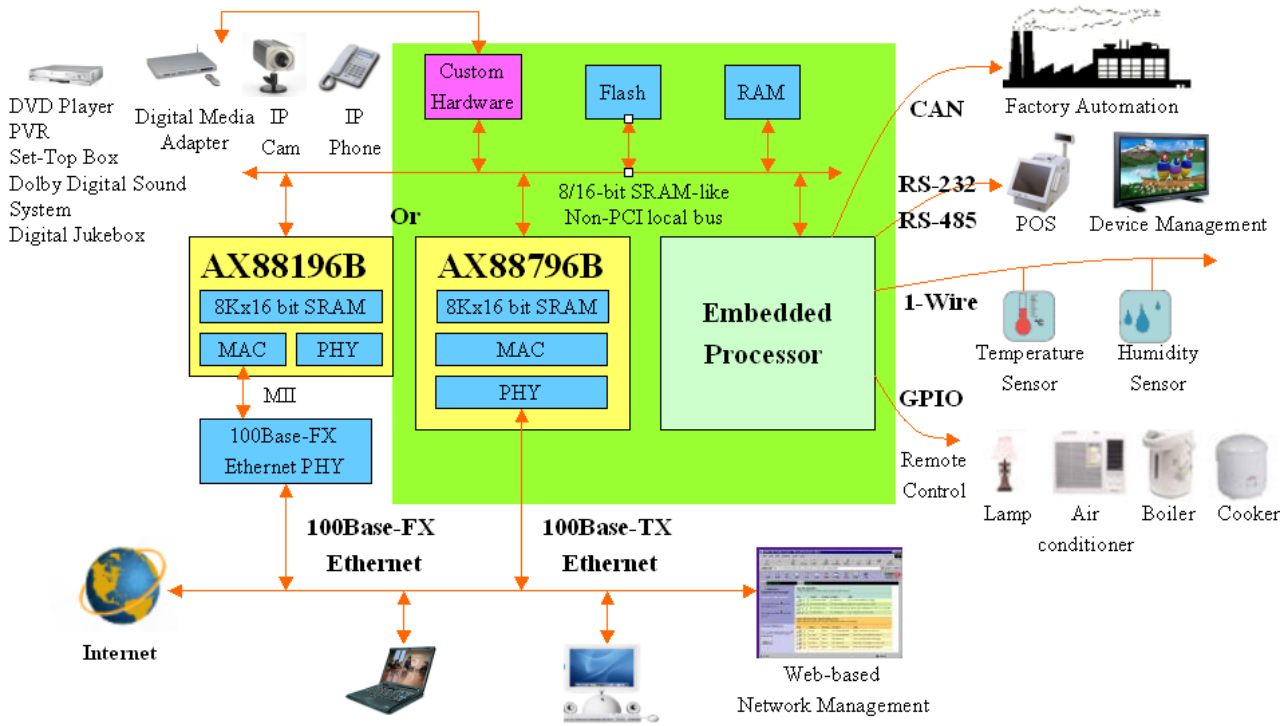
Block Diagram



Applications

The AX88796B/AX88196B, designed with a embedded RISC CPU, provides a very low cost yet very high-performance embedded networking solution to enable easy and simple LAN or Internet access capability to almost every embedded application needs in the Internet era.