

High-Performance Non-PCI Single-Chip 32-bit 10/100M Fast Ethernet Controller

Features

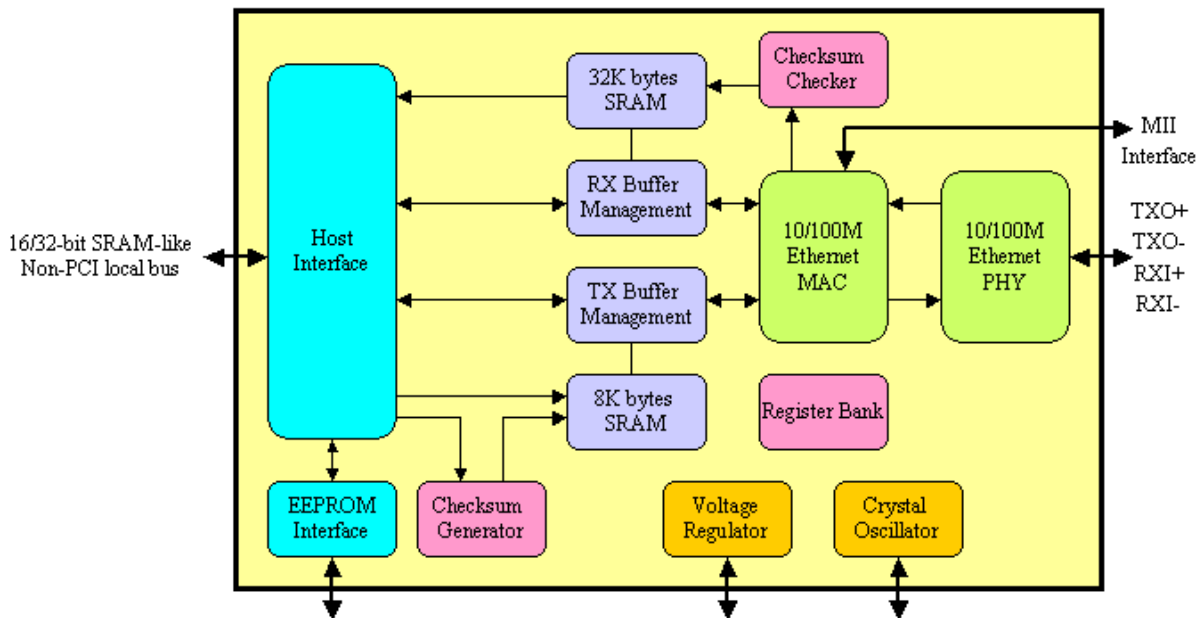
- High-performance non-PCI local bus
 - 16/32-bit SRAM-like host interface (US Patent Approval)
 - Support big/little endian data bus type
 - Large embedded SRAM for packet buffers
 - ▶ 32K bytes for receive buffer
 - ▶ 8K bytes for transmit buffer
 - Support IP/TCP/UDP checksum offloads
 - Support interrupt with high or low active trigger mode
- Single-chip Fast Ethernet controller
 - Compatible with IEEE802.3, 802.3u standards
 - Integrated Fast Ethernet MAC/PHY transceiver in one chip
 - Support 10Mbps and 100Mbps data rate
 - Support full and half duplex operations
 - Support 10/100Mbps N-way Auto-negotiation operation
 - Support IEEE 802.3x flow control for full-duplex operation
 - Support back-pressure flow control for half-duplex operation
- Support packet length set by software
- Support optional MII interface for Ethernet PHY and HomePNA/HomePlug PHY applications
- Support Wake-on-LAN function by following events
 - Detection of network link-up state
 - Receipt of a Magic Packet
- Support Magic Packet detection for remote wake-up after power-on reset
- Support optional EEPROM interface
- Support PCMCIA in 16-bit mode
- Support synchronous or asynchronous mode to host MCU
- Support LED pins for various network activity indications
- Integrated voltage regulator from 3.3V to 2.5V and 25MHz crystal oscillator
- 2.5V for core and 3.3V I/O with 5V tolerance
- 128-pin LQFP with CMOS process, RoHS package

Product Description

The AX88780 is a high-performance and cost-effective single-chip Fast Ethernet controller for various embedded systems including consumer electronics and home network markets that require a higher level of network connectivity. The AX88780 supports 16/32-bit SRAM-like host interface and integrates on-chip Fast Ethernet MAC and PHY, which is IEEE802.3 10Base-T and IEEE802.3u 100Base-T compatible. The AX88780 supports full-duplex or half-duplex operation at 10/100Mbps speed with auto-negotiation or manual setting. The AX88780 integrates large embedded SRAM for packet buffers to accommodate high bandwidth applications and supports IP/TCP/UDP checksum to offload processing loading from microprocessor/microcontroller in an embedded system.

Target Market

- Multimedia applications
 - Content distribution application
 - ▶ Audio distribution system (Whole-house audio)
 - ▶ Video-over IP solutions, IP PBX and video phone
 - ▶ Video distribution system, multi-room PVR
 - Cable, satellite, and IP set-top box
 - Digital video recorder
 - DVD recorder/player
 - High definition TV
 - Digital media client/server
 - Home gateway
 - IPTV for triple play
- Others
 - Printer, kiosk, security system
 - Wireless router & access point

Block Diagram

Applications

The AX88780, designed with a high-performance 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 multimedia application needs in the Internet era.

