CONEXANT

Network Processor with Integrated Ethernet Switch

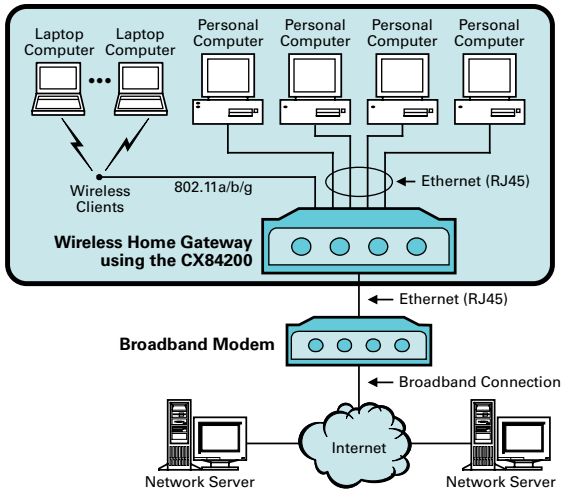
CX84200

Single-Chip Solution with Integrated Five-Port Ethernet Switch

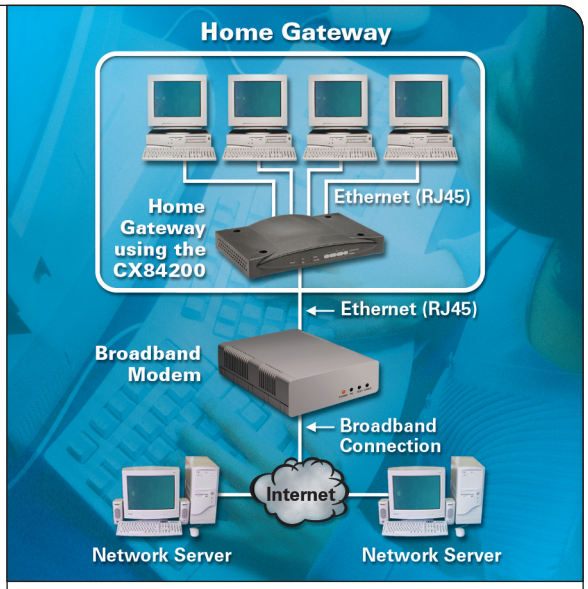
Conexant's broadband communications portfolio includes a comprehensive suite of semiconductor solutions that enable the digital home and information network. The Conexant CX84200 Network Processor supports complete networking system solutions for a wide variety of mainstream applications in the residential and SOHO environments. Based on a 75 MHz ARM7TDMI, this Network Processor is a single-chip solution with an integrated switch that supports five 10/100 Mbps Ethernet ports.

In a Broadband Gateway application, the CX84200 Network Processor can provide Internet access sharing capability for multiple PCs, while supporting Ethernet, HomePNA (Phoneline), HomePlug (Powerline), IEEE 802.11 and other LAN-side networking platforms. For WAN access, the unit supports Ethernet connectivity interoperable with any broadband modem. It is the ideal platform for a configurable broadband gateway design that needs to accommodate many diverse WAN/LAN topologies.

The device complies with IEEE 802.3 specification and includes five embedded DSP-based 10Base-T/100Base-TX transceivers. An auto negotiation function determines the selection of either the 10Base-T or 100Base-TX mode. Typical applications would be a Wireless Home Gateway including an Ethernet WAN port to connect to a Broadband modem, four Ethernet LAN ports, and an 802.11b access connecting to any Wi-Fi compatible device.



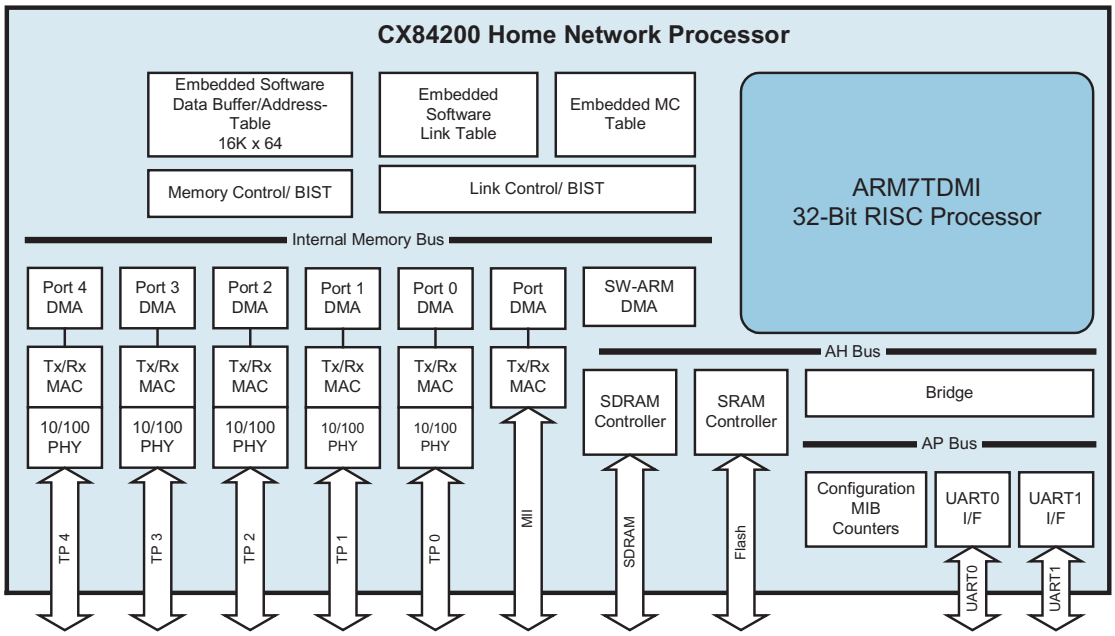
Wireless Home Gateway



CX84200 Distinguishing Features

- Single-chip, high-performance processor with five-port integrated Ethernet switch
- Can be easily integrated with various IEEE 802.11b solutions
- Supports HomePlug (Powerline) and HomePNA (Phoneline) through an MII interface

Part Number	CX84200
Description	Network Processor with Integrated Ethernet Switch



CX84200 Home Network Processor block diagram

CX84200 Features

- 5 Ethernet ports, 1 MII
- Embedded RISC CPU, 75MHZ ARM7TDMI
- Embedded switch engine
  - Store-and-forward operation
  - Non-blocking, full line speed capability
  - Full-duplex (IEEE802.3x) and half-duplex flow control (Back pressure)
  - Two priorities CoS, set by port, VLAN tag, TCPIP TOS, and customized type
  - 6 port grouping VLAN (overlappable)
  - MIB counters
  - Sharing dynamic data buffer management, embedded SSRAM
  - MAC look-up table read/write-able
  - MAC address level security
  - Bandwidth control
  - Hashing scheme: direct-map or XOR
- Embedded 10/100BaseT/TX PHY
  - DSP based design
  - 10BASE-T/100BASE-TX IEEE 802.3u Compliant
  - Digital Decision Feedback Equalizer
  - Integrated Baseline Wander Correction
  - 3 LEDs provided per port
- Flash interface (512Kx8, 512Kx16 up to 1Mx16)
- SDRAM interface (1Mx16x2 up to 4Mx16x2)
- 2 UART interface, one for the modem interface
- GPIO pins
- LAN / WAN bandwidth prioritized
- Single 25MHz crystal input for network
- 2.5/3.3V, 0.25u CMOS process, 208-pin PQFP

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