Wireless Multi-Link Controller

CS22270 Features

PROTOCOL SUPPORT

Cirrus Whitecap™2
- Wi-Fi (802.11b)
- Multimedia and QoS

ON-CHIP SYSTEM

Processor Complex
- 77 MHz ARM7TDMI RISC processor core
- 4 KB integrated L1 cache

Optimized Data Flow
- DMA Control Blocks for each external interface

Memory Controllers
- 16-bit 100MHz SDRAM/FLASH memory interface
- 16 MB addressable memory space

Integrated PLL
- Single crystal oscillator system design

Forward Error Correction (FEC)
- High-performance Reed-Solomon codec
- Wire-like bit error rate performance for wireless transfers (10^{-11} BER performance for typical 10^{-5} BER environment)
- Compliant with ADSL standards

Power Management
- ACPI host compliant
- Four power saving modes
- Programmable sleep timer

SYSTEM INTERFACES

High Speed Digital Radio MAC Interface
- Glueless direct interface to 802.11b baseband processor
- Three power management levels for radio control

Bridging Interfaces
- MII or 7-Pin serial Ethernet interface (AUI/twisted pair)

High Speed Parallel Interface
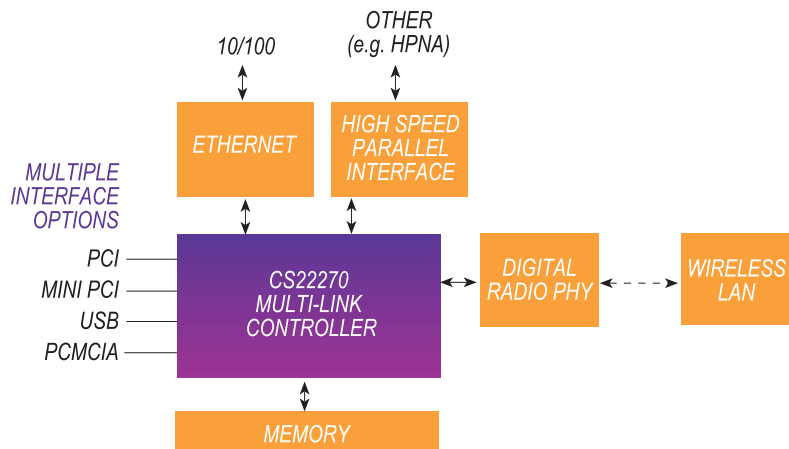- High speed parallel bus
- 32-Bit multiplexed address/data
- Two independent DMA channels

Host Bus Interfaces
- PCI 2.1 and 2.2 compliant
- Mini PCI 1.0 Compliant
- PCMCIA 2.1 Compliant
- USB 1.1 Compliant Device

Reserved I/O
- Network status indicators
- I/O registers for custom applications

Package/Technology
- 1.8 V Core, 3.3 V I/O
- 0.20 micron CMOS process
- Packaging Type: 256 PBGA

The Cirrus CS22270 Wireless Multi-Link Controller incorporates the IEEE 802.11b media access controller (MAC) to enable Wi-Fi compliant wireless network devices providing industry-wide interoperability. In addition, the CS22270 supports our multi-media and quality of service (QoS) extensions to distribute entertainment content wirelessly throughout the home network – with unparalleled performance.

Extending The Broadband Experience

The Cirrus CS22270 is the industry's first broadband wireless network controller to deliver wired and wireless home networking that effectively delivers entertainment content. It is a highly integrated, single chip device containing a high performance ARM complex processor and several industry standard system and network connectivity interfaces. It enables standalone or embedded home networking devices. This programmable architecture enables a firmware upgrade path to new features and to track changes in standards specifications. The CS22270 delivers an optimal level of flexibility in cost, functionality, and performance for such products.

Multiple LAN and System Interfaces

The Cirrus CS22270 offers on-chip interfaces for USB, PCI, MII, 10/100BT Ethernet, and high speed digital 802.11b wireless radio. A high speed parallel interface provides a 32-bit interface to connect to other networking devices and codecs designed into the digital set-top box or residential gateway, for example.

Industry standard host and networking interfaces ensure a glueless and cost-effective architecture that is interoperable with other home networking products and systems.

Lower Cost Devices

The net result of the CS22270's integration of system services functions and multiple LAN interfaces is an overall decrease in total system cost, board space, and power consumption for home networking products.

Applications

Cirrus CS22270-based broadband devices allow distribution of entertainment content and services from the digital set-top box or residential gateway to other devices within the home. This solution also provides flexibility of content distribution through multiple LAN subnets within the home, such as wireless, phoneline, and Ethernet. CS22270 enables a wide range of product configurations for gateway-like products – ranging from wireless Ethernet bridges to integrated platforms with WAN-to-Multi-LAN routing and other advanced features.

Typical application platforms enabled by the Cirrus CS22270 include:

- Wireless bridging and routing (xDSL/cable modems, cable set-tops, fixed wireless hubs)
- Broadband residential gateways
- Home networking bridges (Ethernet, HPNA, USB)

Related Products

- Cirrus CS22210 Wireless PCI/USB Controller
- Cirrus CS22220 Wireless PCMCIA Controller
- Cirrus CS22230 Wireless Mini PCI Controller
- Cirrus CS22250 Wireless 10BT Controller
- Cirrus Whitecap™2 Network Protocol
- Cresta3 Radio Design

For more information, visit us at www.cirrus.com