Product: PCIe® 4-Port/4-Lane SlimLine™ Packet Switch

Part Numbers: PI7C9X20404SL

Product Description

The PI7C9X20404SL is a 4-port/4-lane PCI Express® SlimLine™ Packet Switch specifically designed to meet the latest low-power, lead (Pb)-free and green system requirements. The PI7C9X20404SL is a cost-effective solution that can be implemented in systems such as motherboard, laptop, docking station, combo card, HBA, set-top box, embedded system and other mobile or power-sensitive high performance platforms. The name of the family, SlimLine™, refers to Pericom's proprietary power-saving technology.

The PI7C9X20404SL provides one upstream port and three x1 downstream ports. The PI7C9X20404SL provides users the flexibility to expand or fan-out from a wide range of I/O Bridges such as MCH, ICH, embedded MCU and other Application Specific ICs.

Industry Specifications Compliance

- PCI Express® Base Specification, Revision 1.1
- PCI Express CEM Specification, Revision 1.1
- PCI-to-PCI Bridge Architecture Spec., Rev 1.2
- Advanced Configuration Power Interface (ACPI) Specification
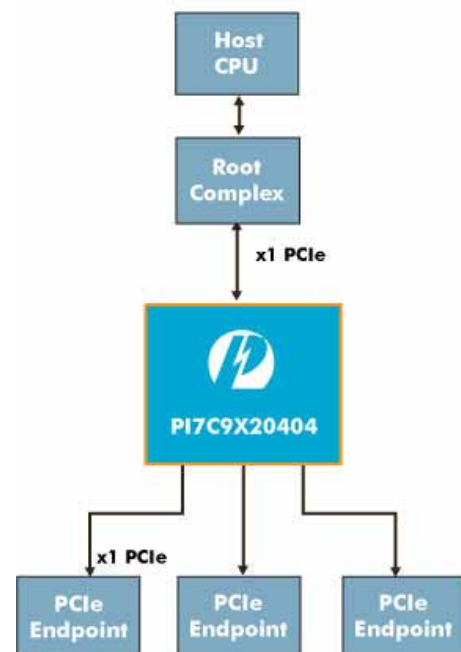
Features

- Non-blocking full-wired switching capability at 16 Gbps when all 4 lanes are enabled
- Reliability, Availability and Serviceability
  - Supports Data Poisoning and End-to-End CRC
  - Advanced Error Reporting and Logging
  - IEEE 1149.6 JTAG interface support
- Link Power Management
  - Supports L0, L0s, L1, L2, L2/L3$_{Ready}$ and L3 link power state
  - Active state power management for L0s and L1 state
  - Beacon or Wake# support in L2 state
- Device State Power Management
  - Supports D0, D3$_{Hot}$ and D3$_{Cold}$
  - 3.3V Aux Power support in D3$_{Cold}$ power state
- Supports up to 256-byte maximum payload size
- Power Dissipation: 0.4 W typical in normal mode, 0.25 W typical in standby mode
- Industrial Temperature Range -40° to 85°
- Package: 128-pin LQFP 14mm x 14mm
  - Pb free and 100% Green

Enhanced Features

- Programmable Driver Current and De-Emphasis Level at each individual port
- 150ns typical latency for packet running through switch without blocking
- Supports "Cut-through"(Default) as well as "Store and Forward" mode for switching packets
- Supports up to 256-byte maximum payload size
- Advanced Power Savings
  - Empty downstream ports are set to idle
  - Clock to corresponding circuit is turned off when any port enters L1 or ASPM L1

Applications

- Notebook internal PCIe® fan-out
- PCIe Surveillance and Combo cards
- PC Motherboard PCIe slot expansion
- Wire/ Wireless Tele/ data communication
- Embedded system
- Set-top box and consumer devices
- Industrial control

PI7C9X20404SL – Application Example