

**Product: PCIe® UltraLo™ 3-Port/3-Lane Packet Switch**

**Part Numbers: PI7C9X20303UL**

## Product Description

The PI7C9X20303UL is a 3-port/3-lane PCI Express® Packet Switch specifically designed to meet the latest ultra low-power, lead (Pb)-free and green system requirements. The PI7C9X20303UL is a cost-effective solution that can be implemented in systems such as combo card, HBA, set-top box, embedded system, motherboard, laptop, docking station and other mobile or dimension/ power-sensitive high performance platforms.

The PI7C9X20303UL provides one upstream port and two x1 downstream ports. The PI7C9X20303UL provides users the flexibility to expand or fan-out from a wide range of I/O Bridges such as ICH, embedded MCU, wireless chipset CPU, 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

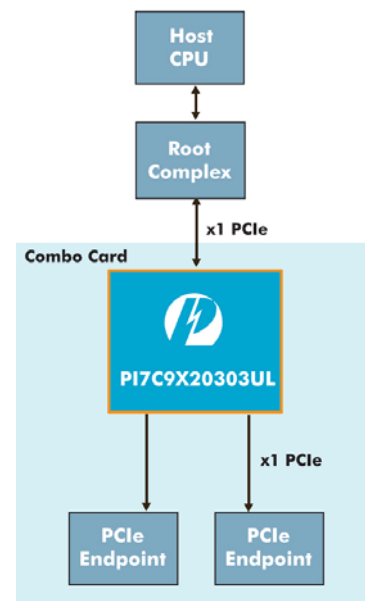
- Non-blocking full-wired switching capability at 12 Gbps when all 3 lanes are enabled
- Reliability, Availability and Serviceability
  - Supports Data Poisoning and End-to-End CRC
  - Advanced Error Reporting and Logging
  - IEEE 1149.6 JTAG interface support
- Link Power Management
  - Supports L0, L0s, L1, L2, L2/L3<sub>Ready</sub> 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<sub>Hot</sub> and D3<sub>Cold</sub>
  - 3.3V Aux Power support in D3<sub>Cold</sub> power state
- Supports up to 256-byte maximum payload size
- Power Dissipation: 0.25 W typical in active mode, 0.15 W typical in standby mode
- Industrial Temperature Range -40° to 85°
- Package: 132-pin TQFN 10mm x 10mm
  - Pb free and 100% Green.

## Enhanced Features

- UltraLo™ power consumption to meet mobile applications
- 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
- Peripheral
- Consumer electronics



**PI7C9X20303UL – Application Example**