Product: **Gen2 PCIe® 3-Port/4-Lane ExtremeLo™ Packet Switch**

Part Numbers: **PI7C9X2G304EL**

Product Description

The PI7C9X2G304EL is a PCI Express® 2.1 3-port/4-lane PCI Express ExtremeLo™ Packet Switch specifically designed to meet the latest low-power, lead (Pb)-free and green system requirements. The PI7C9X2G304EL is a high-performance, cost-effective solution that can be implemented in systems such as Embedded system, Wii-Fi router/ gateway, Printer, Storage, combo card, HBA, set-top box, motherboard, laptop, docking station, and other power-sensitive high performance platforms. The name of the family, ExtremeLo™, refers to Pericom's proprietary power-saving PowerSave™ technology.

The PI7C9X2G304EL provides one x1 or x2 upstream port and two x1 downstream ports. The PI7C9X2G304EL provides users the flexibility to expand or fan-out from a wide range of I/O Bridges such as PCH, ICH, IOH, embedded MCU, FPGA, and other Application Specific ICs.

Industry Specifications Compliance
- PCI Express® Base Specification, Revision 2.1
- PCI Express CEM Specification, Revision 2.0
- PCI-to-PCI Bridge Architecture Spec., Rev 1.2
- Advanced Configuration Power Interface (ACPI) Specification

Features
- PCISIG PCI Express 2.1 certificated
- Integrated 100MHz Clock buffer for each downstream port
- 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
- Device State Power Management
  - Supports D0, D3$_{Hot}$ and D3$_{Cold}$
  - 3.3V Aux Power support in D3$_{Cold}$ power state
- Supports up to 512-byte maximum payload size
- Power Dissipation: 0.65 W typical in L0 normal mode
- Industrial Temperature Range: -40° to 85°C
- MTBF: 50,927,360 hours
- Package: 136-pin aQFN 10mm x 10mm
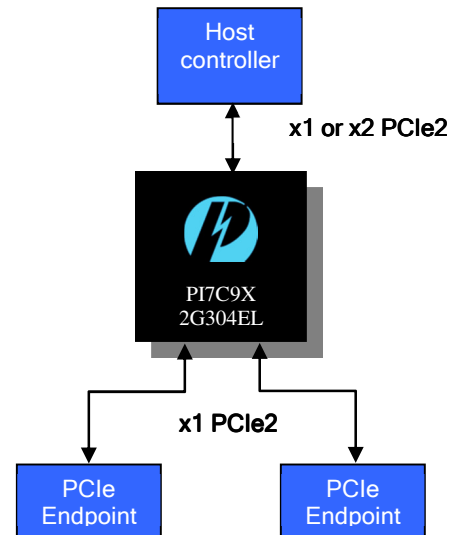 - Pb free and 100% Green

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
- 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
- Supports Access Control Service (ACS) for peer-to-peer traffic
- Supports Address Translation (AT) packet for SR-IOV application
- Supports Latency Tolerance Reporting (LTR) to improve Platform Power Management
- Supports Optimized Buffer Flush Fill (OBFF) to improve Platform Power Management

Applications
- Wireless AP/ Router
- Wire/ Wireless Tele/ data communication
- Embedded system
- Set-top box and consumer devices
- Industrial control
- NAS/ Storage
- Printer/ MFP
- Peripheral
- PCIe Surveillance and Combo cards
- Notebook internal PCIe fan-out
- PC Motherboard PCIe slot expansion

PI7C9X2G304EL – Application Example

Order Information

PART NUMBER	PACKAGE	PB-FREE & GREEN	TEMPERATURE
PI7C9X2G304ELZXAEX†	136 aQFN	YES	-40°C TO 85°C
PI7C9X2G304ELEVB-X1U	Board	Evaluation kit for PI7C9X2G304ELB with x1 PCIe uplink	

† Note: Adding an X suffix =Tape/Reel

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