PERICOM
Enabling Serial Connectivity

Product Brief

Product: PCI Express® (PCIe®) to USB® 2.0 Swidge

Part Numbers: PI7C9X442SL

Product Description

The PI7C9X442SL PCI Express® to USB® 2.0 Swidge is designed to meet the latest low-power, lead (Pb)-free and green system requirements. The PI7C9X442SL is a cost-effective solution that can be implemented in systems such as volume servers, embedded systems, motherboards, laptops, docking stations, peripherals, PC add-in cards and other footprint sensitive platforms requiring multiple USB host connections.

The PI7C9X442SL provides one x1 upstream PCIe port, two x1 downstream PCIe ports, and up to 4 USB 2.0 host controller ports. The PI7C9X442SL provides users the flexibility to expand or fan-out from a wide range of I/O Bridges such as IOH, PCH, ICH, embedded MCU and other Application Specific ICs.

Industry Specifications Compliance

- PCIe Base Specification, Revision 1.1
- PCIe CEM Specification, Revision 1.1
- PCI-to-PCI Bridge Architecture Spec., Rev 1.2
- Advanced Configuration Power Interface (ACPI) Specification
- Universal Serial Bus (USB) 2.0 Compliant (1.5/12/480 Mbps)
- Universal Serial Bus(USB) EHCI 1.0a/OHCI 1.0 Compliant
- System Management (SM) Bus, 1.0 Compliant

PCI Express Packet Switch Features

- One x1 PCIe 1.1 upstream port and two x1 PCIe 1.1 downstream ports
- Supports "Cut-through"(Default) as well as "Store and Forward" mode for packet switching
- 150 ns typical latency for packet routed through Switch without blocking
- Non-blocking full-wired switching capability at 16 Gbps when 3 ports plus 4 USB 2.0 ports are all enabled
- Advanced Power Saving
  - o Empty downstream ports are set to idle state to minimize power consumption
- Link Power Management
  - o Supports L0, L0s, L1, L2, L2/L3Ready and L3 link power state
  - o Active state power management for L0s and L1 state
  - o PME# support in L2 state
- Device State Power Management
  - o Supports D0, D3Hot and D3Cold device power state
  - o 3.3V Aux Power support in D3Cold power state
- Port Arbitration: Round Robin (RR), Weighted RR and Time-based Weighted RR
- Supports up to 256-byte maximum payload size
- Programmable driver current and de-emphasis level at each PCIe port
- Reliability, Availability and Serviceability
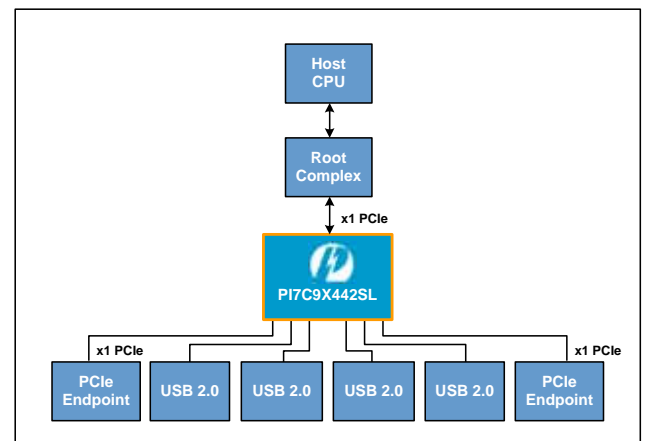
USB 2.0 Host Controller Features

- USB Root hub with 4 (max.) downstream facing ports which are shared by OHCI and EHCI host controllers
- All USB downstream facing ports can handle High Speed (480 Mbps), Full Speed (12 Mbps) and Low Speed (1.5 Mbps) transactions
- PCI multi-function device consists of two OHCI host controllers for Full Speed/Low Speed signaling and one EHCI host controller for High Speed signaling
- USB Host Controller operational registers directed-mapped to PCI

General Features

- Strapped pins configurable with optional EEPROM or SMBus interface support
- Extended Commercial Temperature Range 0° to 85°
- 128-pin LQFP 14mm x 14mm package

Applications

- Notebook
- PC Motherboard
- Notebook Docking Stations
- Embedded system
- Volume Servers
- Multifunction Printers
- Consumer electronics
- Peripheral
- PC Add-in card/ Express card
- Industrial PC
- Telecom/Networking
- SOHO router

PI7C9X442SL – Block Diagram

Order Information

PART NUMBER	PACKAGE	PB-FREE & GREEN	TEMPERATURE
PI7C9X442SLFDE	128 LQFP	YES	0°C TO 85°C
PI7C9X442SLEVB	Board	Evaluation kit for PI7C9X442SL	

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