

**Product:** PCI Express® (PCIe®) to USB® 2.0 Host Controller

**Part Numbers:** PI7C9X440SL

## Product Description

The PI7C9X440SL PCI Express® to USB® 2.0 Host Controller is designed to meet the latest low-power, lead (Pb)-free and green system requirements. The PI7C9X440SL is a cost-effective solution that can be implemented in systems such as volume servers, storages, embedded systems, medical, industrial, automation, network, IP TV, peripherals, PC add-in cards and other footprint sensitive platforms requiring multiple USB host connections.

The PI7C9X440SL provides one x1 upstream PCIe port and up to 4 USB 2.0 host controller ports. The PI7C9X440SL provides users the flexibility to expand system connectivity from a wide range of I/O Bridges such as IOH, PCH, embedded MCU, SoC and other Application Specific ICs.

## Industry Specifications Compliance

- PCIe Base Specification, Revision 1.1
- PCIe CEM Specification, Revision 1.1
- 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 Interface Features

- x1 PCIe 1.1 port
- Link Power Management
  - Supports L0, L0s, L1, L2, L2/L3Ready and L3 link power state
  - Active state power management for L0s and L1 state
  - PME# support in L2 state
- Device State Power Management
  - Supports D0, D3Hot and D3Cold device power state
  - 3.3V Aux Power support in D3Cold power state
- Supports up to 256-byte maximum payload size
- Programmable driver current and de-emphasis level at PCIe port
- Reliability, Availability and Serviceability

## USB 2.0 Host Controller Features

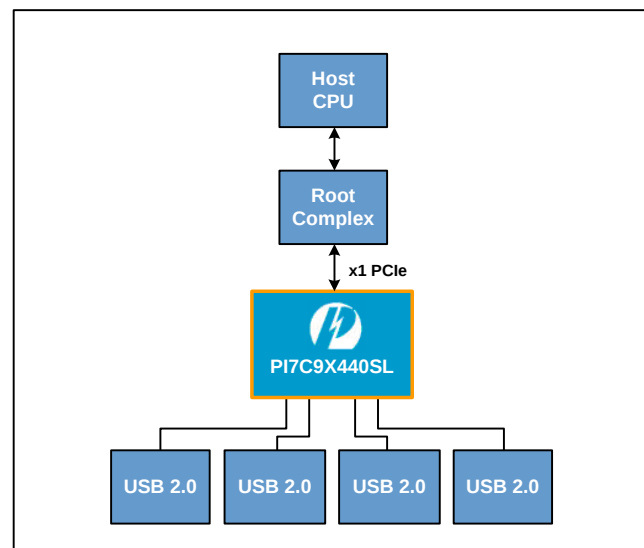
- USB Root hub with 4 (max.) downstream facing ports which are shared by OHCI and EHCI host controllers
- All USB downstream facing ports can handle High Speed (480 Mbps), Full Speed (12 Mbps) and Low Speed (1.5 Mbps) transactions
- PCI multi-function device consists of two OHCI host controllers for 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
- Industrial Temperature Range -40° to 85°
- 128-pin LQFP 14mm x 14mm package

## Applications

- Embedded system
- Digital security surveillance/ DVR
- In Vehicle infotainment
- Medical/ Industrial/ Automation
- POS/ Vending Machine
- Volume Servers/ Storage
- Peripheral/ Multifunction Printers
- PC/ NB Add-in card/ Express card
- Smart Grid/ Smart Meter
- Telecom/Networking
- SOHO router/ IP TV
- Gaming/ M2M



**PI7C9X440SL – Block Diagram**

## Order Information

| PART NUMBER     | PACKAGE  | PB-FREE & GREEN                 | TEMPERATURE   |
|-----------------|----------|---------------------------------|---------------|
| PI7C9X440SLBFDE | 128 LQFP | YES                             | -40°C TO 85°C |
| PI7C9X440SLBEVB | Board    | Evaluation kit for PI7C9X440SLB |               |