

Application: Industrial PC: Point of Sale Terminals Pericom Devices: PI3USB40, PI3USB20, PI3USB10 Switches

Overview

The Industrial PC market segment offers a number of computing solutions that enable the development of advanced Point of Sale (POS) equipment, automation equipment used in manufacturing, and inventory control solutions that monitor the warehousing of goods. All of these Industrial PC's are built on reference platforms provided by Intel's embedded processor architecture. These architectures consist of advanced microprocessor solutions ranging in performance from low power, value and high performance configurations. The products are based on a number of standard industrial form factors that include ATX, PC-104, EBX, VME, Compact ATX, embedded ATX, and Micro ATX.



Figure 2: Examples of POS Terminals

Typical Intel Industrial PC Reference Platform Configuration	
Processor:	Pentium II, III, IV or Celeron
Speed:	266 MHz / 333 MHz, 566 MHz / 850 MHz / 1.2 GHz, 2.0GHz / 2.4 GHz
Chipset:	Intel 440BX, 440BX / PIIX4E
Graphics:	69000 / 69030
Ethernet:	82559
PCI-PCI Bridge:	21150* / 21152* / 21154*
* Pericom Bridge Equivalents = PI7C8150, PI7C8151, PI7C8154	

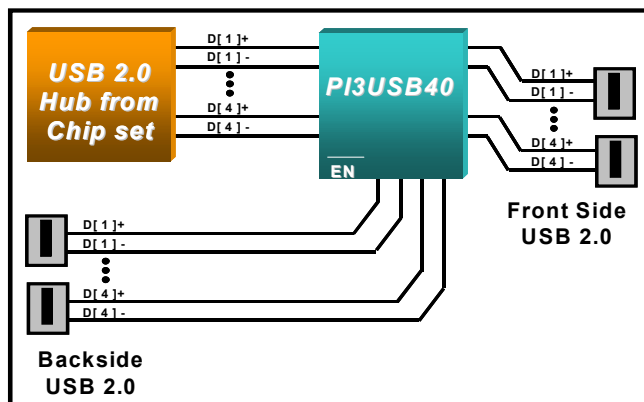


Figure 1: Compact ATX reference platform board

Many retailers use POS products based on the ATX and Compact ATX Industrial PC form factors. These platforms provide retailers with a flexible and expandable solution that accommodates a variety of peripheral based on USB, RS-232, and DVI connectivity. One of the most important keys to enabling flexibility in these product platforms is to allow the retailer a choice of connecting peripherals from the front side or backside of the POS terminal. Since most of the current Industrial PC solutions are based on microprocessor chip sets with a limited number of USB ports (typically 2 – 4 ports), a USB 2.0 switching solutions is required to provide the ability to access these limited USB ports from either the front side or backside of the POS terminal.

Pericom Overview

The PI3USBxx IC's are a family of USB 2.0 switches offered by Pericom. Pericom offers three USB 2.0 switching solutions. The PI3USB10 (2-Channel, 2:1 Mux/Demux), PI3USB20 (4-Channel, 2:1, Mux/Demux) and PI3USB40 (8-Channel, 2:1, Mux/Demux) devices were designed to pass USB 2.0 signals at a bit rate of 480 Megabits per second, without distortion. They are designed for ease of layout and align the differential signals from the USB host controller in such a way to reduce Crosstalk and other noise interference between the signal lines. These devices provide low and flat on-resistance along with low on-capacitance.



The PI3USB40 is shown switching four USB 2.0 signals in an Industrial PC chipset solution between the front side and backside of a POS terminal.

Key Features & Specifications

- ❑ Differential 1, 2, or 4-Channel x 2:1 Mux/Demux Sw
- ❑ Low On-Resistance: 4-Ohms
- ❑ Low Channel-to-Channel Skew: 100 picoseconds
- ❑ Low Crosstalk: -27 decibels @ 250 Megahertz
- ❑ High Off Isolation: -32 decibels @ 250 Megahertz
- ❑ Near-Zero Propagation Delay: 250 picoseconds
- ❑ Fast Switching Speed: 9 nanoseconds
- ❑ Low On-Capacitance: 6 picoFarads
- ❑ VCC Operating Range: +3.0 Volts to +3.6 Volts
- ❑ ESD: >2000 Volts ... Human Body Model
- ❑ Bandwidth/Data Frequency: >5 00 Megahertz
- ❑ Packages Available:
 - 16 and 48-pin TSSOP
 - 12 – pin TDFN

Key Benefits

- ❑ Provides a way to switch between 1, 2, and 4 USB 2.0 signals in a compact IC solution.
- ❑ Integrated Low, Full, and Hi-Speed Signal Solution
- ❑ Enables the customer to re-use the host USB 2.0 ports on the microprocessor chip set
- ❑ Easy layout (Does not require multiple PCB layers for routing the I/O lines)

Product Status and Pricing

- ❑ Samples: Available Today
- ❑ Production: Today
- ❑ Pricing:
 - ❑ PI3USB40: \$3.00 per 1,000 pieces
 - ❑ PI3USB20: \$1.50 per 1,000 pieces
 - ❑ PI3USB10: \$0.75 per 1,000 pieces

Additional Information

- ❑ On the Secure extranet Partner Channel
 - New Product Bulletin
 - Sales Rep Training Presentation
- ❑ On the Public Website
 - ❑ Datasheets, Application Notes, Presentation, IBIS
www.pericom.com/usb

Contact Information

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Product Marketing

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