

The PDIUSBH11A is a 4-port optimized USB compound hub. Communicating with a system microcontroller over the fast I<sup>2</sup>C serial bus, it is easily integrated into existing systems, cutting down development time, risks and costs, resulting in fast and cost-effective development of USB peripheral solutions.

# PDIUSBH11A

## 4-port optimized USB hub device

### Description

Philips Semiconductors' 4-port USB hub PDIUSBH11A is designed for use in microcontroller-based systems. It is a cost- and feature optimized second generation USB Hub with 4 downstream ports and 3 embedded functions (compound hub). This modular approach to implementing a USB hub with embedded functions allows the designer to choose the optimum system microcontroller from the wide variety available, use existing architecture and the firmware investments, and results in the fastest way to develop the most cost-effective USB peripheral solutions that need hub functionality.

Fully compliant to these specifications — USB Rev 1.0, I<sup>2</sup>C serial interface, SMBus, Human Interface Device Class, and Monitor Control Class — makes the PDIUSBH11A ideal for a wide variety of peripherals that use the I<sup>2</sup>C or the SMBus based architecture, such as computer monitors, docking stations, keyboards and many other applications.

Low suspend power consumption along with programmable LazyClock output make it simple to design equipment compliant to the ACPI, OnNow and USB power management requirements. The low operating power also allows the implementation of the bus powered or the compound powered hub function. In addition, features such as SoftConnect™, GoodLink™, LazyClock, programmable clock output, lower frequency crystal oscillator, additional embedded functions and integration of termination resistors contribute to significant overall system cost savings and simplify the task of integrating advanced USB functionality into peripherals.

### Evaluation Kits

There are three evaluation kits:

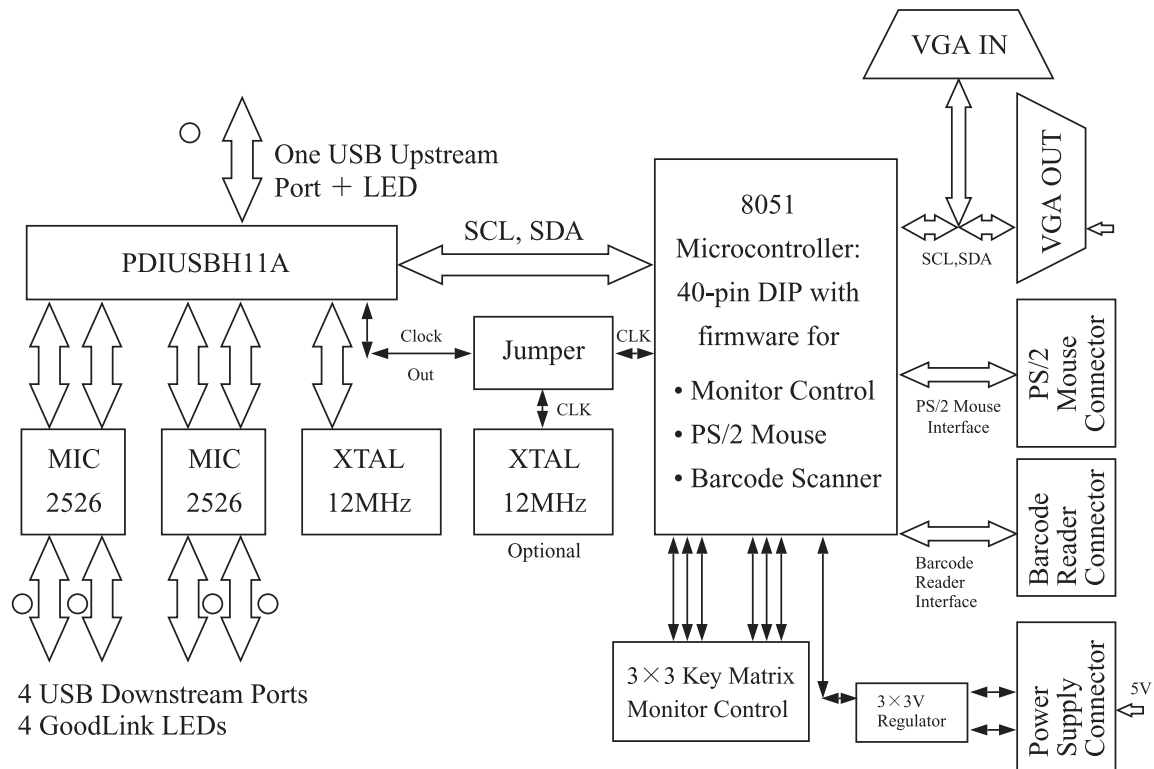
- USB Multimedia Monitor Hub Eval Kit
- USB Pure Hub Eval Kit
- PS/2 Mouse-to-USB Hub Eval Kit

### Features

- Compliant with the USB Spec. Rev. 1.0, and ACPI, OnNow, and USB power management requirements
- Compliant with USB (HID) and Monitor Control Class
- Compliant with SM Bus Specification Rev. 1.0
- Four downstream ports with per packet connectivity and autospeed detection
- Support for up to 3 embedded functions
- Integrated Serial Interface Engine (SIE), FIFO memory and transceivers
- Automatic USB protocol handling
- Fast I<sup>2</sup>C interface (up to 1 Mbit/s)
- Software controllable connection to USB (SoftConnect™)
- Good USB downstream connection indicators that blink with traffic (GoodLink™)
- Low frequency 12 MHz crystal oscillator with well-matched, slewrate controlled USB transceiver eases EMI design issues
- Programmable 4-24 Hz output clock frequency
- Bus powered capability with very low suspend current
- Single 3.3V supply with 5V tolerant I/O
- Full-scan design with high fault coverage (>99%) ensures high quality
- Higher than 8 kV in-circuit ESD protection lowers cost of extra components
- Available in 32-pin SDIP and SO packages



# System Block Diagram for H11A Evaluation Kits



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