

# PC87382 LPC-to-LPC Switch for Docking Stations, with Fast Infrared Port, Serial Port and GPIOs

## General Description

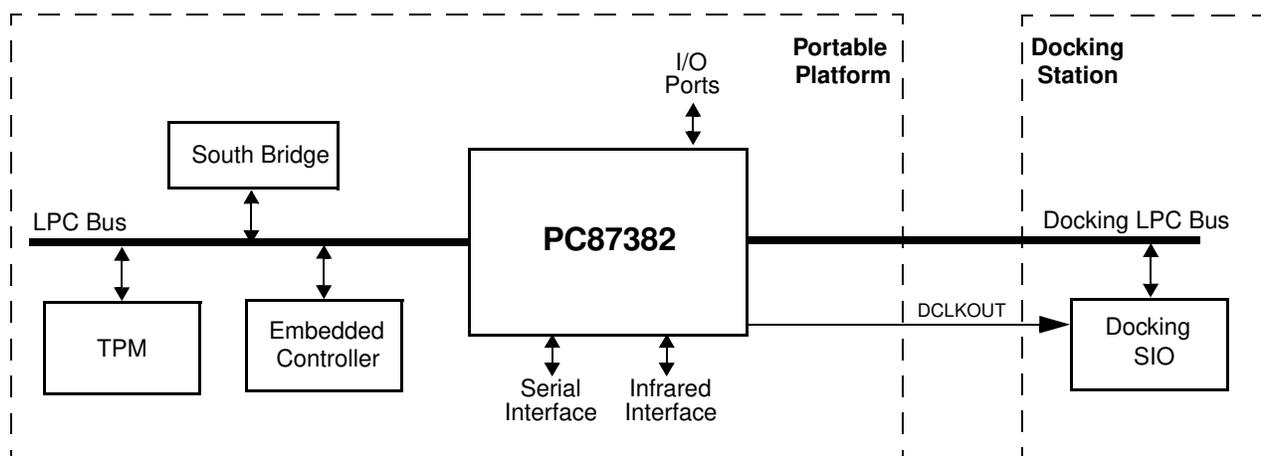
The PC87382, a member of the Winbond LPC SuperI/O family, is targeted for a wide range of portable applications. The PC87382 is PC2001 and ACPI compliant, and features an LPC-to-LPC Switch with hot plugability, Fast Infrared port (FIR, IrDA 1.1 compliant), Serial Port, and General-Purpose Input/Output (GPIO) support for a total of eight ports.

The PC87382 enables glueless implementation of an LPC-to-LPC Switch between the motherboard LPC bus and the Docking Station, and supports hot insertion and hot removal.

## Outstanding Features

- LPC-to-LPC Switch with hot plugability, enables LPC devices in the Docking Station to be connected to the Main LPC Bus, thus reducing the number of signals required through the Docking Station connector
- LPC bus interface, based on Intel's *LPC Interface Specification* Revision 1.1, August 2002 (supports CLKRUN signal)
- Fast Infrared port
- PC2001 and ACPI Revision 3.0 compliant
- Serial IRQ support (15 options)
- Protection features, including GPIO lock and pin configuration lock
- Eight GPIO ports including five with "assert IRQ" capability
- XOR Tree and TRI-STATE<sup>®</sup> device pins (for ICT) testability modes.
- 5V tolerant and back-drive protected pins (except LPC bus pins)
- 48-pin LQFP package

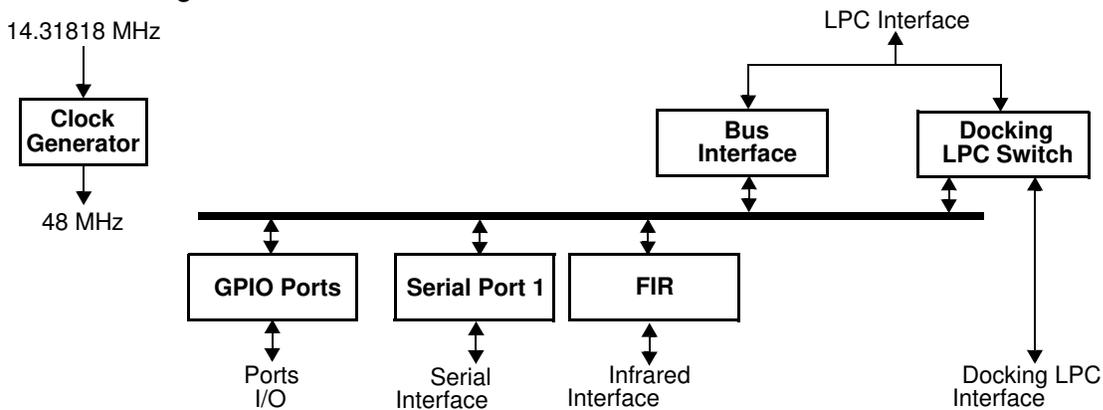
## System Block Diagram



## Features

- LPC System Interface
  - 8-bit I/O cycles
  - $\overline{\text{CLKRUN}}$  support
  - Implements PCI mobile design guide recommendation (*PCI Mobile Design Guide 1.1, Dec. 18, 1998*)
- LPC-to-LPC Switch
  - Hot plugability
  - $\overline{\text{CLKRUN}}$  support
  - The connection is controlled by software
  - Low switch resistance and propagation delay
  - Programmable Clock to Reset Delay
- PC2001 and ACPI Compliant
  - PnP Configuration Register structure
  - Flexible resource allocation for all logical devices
    - Relocatable base address
    - 15 IRQ routing options
    - Two optional 8-bit DMA channels (where applicable) selected from four possible DMA channels
  - Supports ACPI Specification Revision 3.0 September 2, 2004
- Clock Sources
  - 14.318 MHz or 48 MHz clock input
  - LPC clock, up to 33 MHz
  - 14.318 MHz or 48 MHz clock output to the docking station
- Power Supply
  - 3.3V supply operation
  - All pins are 5V tolerant, except LPC bus pins
  - All pins are back-drive protected, except LPC bus pins
- Eight General-Purpose I/O (GPIO) Ports
  - Support assert IRQ
  - Programmable drive type for each output pin (open-drain, push-pull or output disable)
  - Programmable option for internal pull-up resistor on each input pin
  - Output lock option
  - Input debounce mechanism
- Serial Port
  - Software compatible with the 16550A and the 16450
  - Shadow register support for write-only bit monitoring
  - UART data rates up to 1.5 Mbaud
- Fast Infrared Port (FIR)
  - Software compatible with the 16550A and the 16450
  - Shadow register support for write-only bit monitoring
  - FIR IrDA 1.1 compliant
  - HP-SIR
  - ASK-IR option of SHARP-IR
  - DASK-IR option of SHARP-IR
  - Consumer Remote Control supports RC-5, RC-6, NEC, RCA and RECS 80
  - DMA support: 1 or 2 channels
- Strap Configuration
  - Base Address (BADDR) strap to determine the base address of the Index-Data register pair
  - Strap Inputs to select testability mode
- Testability
  - XOR Tree
  - TRI-STATE device pins

## Internal Block Diagram





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