QLogic Corporation

Zircon PM Peripheral Management Controller

Data Sheet

Product Description

Zircon PM is an intelligent peripheral management controller for CompactPCI I/O boards and other peripheral devices such as chassis, front panels, power supplies and fans. It meets all the requirements defined in the CompactPCI System Management Specification including hardware and firmware support for the IPMI specification. Combining the QLogic Zircon Baseboard Management Controller (BMC), which resides on CompactPCI system boards, with Zircon PM forms a complete management solution for CompactPCI-based systems.

Zircon PM supports the "Standard Node" as defined by the System Management specification. This includes compliance with electrical and functional requirements, which enables Zircon PM to maintain stable system management operation during board insertion and extraction. It also provides glitch, or signal transient rejection; built-in mechanisms to recover from transmission line violations such as aborted transfers and stuck signal lines on the IPMB. General purpose input/output pins may be used for geographical slot addressing and shelf addressing as defined by the CompactPCI and Computer Telephony specifications, respectively.

Zircon PM also features embedded functions that provided advanced system management capabilities such as fan speed monitoring and control, voltage monitoring, and board power control.

Zircon PM's high integration, extensible design and software support make it the ideal peripheral management controller for Embedded Computer applications such as telecommunications and voice processing equipment. Other applications include peripheral devices such as power supplies and front panel displays, which need to support IPMI.

The Zircon PM block Diagram is illustrated in figure 1.

Features

Specifications Supported

- *Intelligent Platform Management Interface (IPMI)* versions 1.0
- Intelligent Platform Management Bus (IPMB) versions 1.0
- PCI Industrial Computer Manufacturers Group (PICMG) *System Management Specification* 2.9 R1.0

Connectivity

- Three I2C interfaces
  - Up to 400 KHz operation
  - Two master/slave interfaces which may be used to communicate with other I2C-based devices and other IPMI-based management controllers
  - One master only interface with the ability to read I2C-based devices such as SEEPROMs. Used to load operational firmware

Input/Output

- 24 (max) general purpose input/output pins which may be used for:
  - Geographical slot address
  - Shelf address
  - Hot swap functions
  - LEDs and audible indicators
- Two 16-bit fan tachometer inputs to monitor fan speed
- Two Pulse Width Modulator (PWM) outputs to control fan speed or as a tone generator to drive audible alarms.
- One push button input with debounce circuitry
- Six 10-bit Analog to Digital converter inputs

Processor and Memory

- 32-bit RISC Processor
- 64 Kbytes internal SRAM

Package: 80-pin Thin Quad Flat Pack (TQFP)

Software: Configuration/firmware download utility provided

Firmware

- IPMI 1.0 framework and protocol
- Development Kit available; allows designers to customize the Zircon PM firmware

Zircon PM Block Diagram

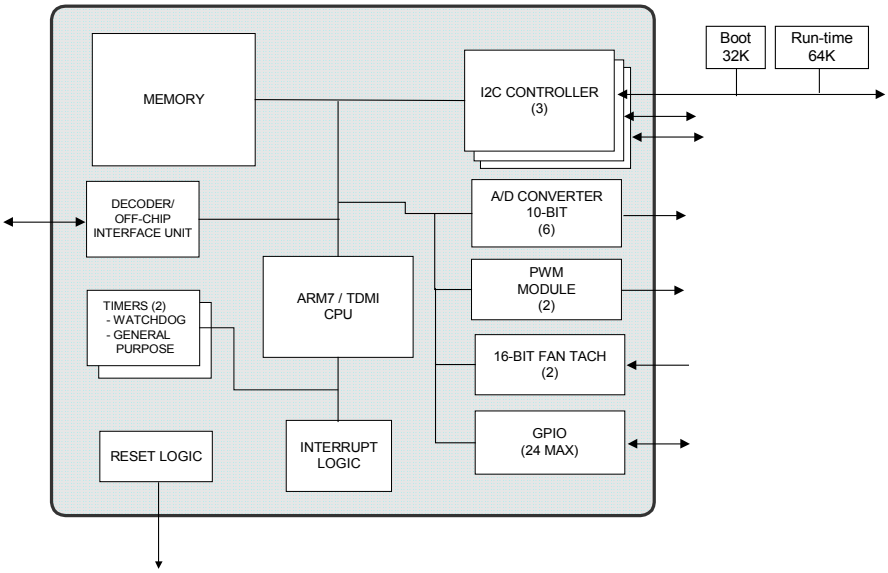

Figure 1. Zircon PM Block Diagram

CompactPCI System Management Architecture

The CompactPCI System Management Specification in conjunction with the IPMI specification defines the management architecture for CompactPCI systems. These specifications standardize the various interfaces, protocols and electrical requirements allowing for interoperability between chassis, CPU boards and I/O boards. IPMI-compatible baseboard management controller (BMC) resides on the CPU (Central Processor Unit) board and a peripheral management controller (PMC) resides on the I/O boards. A serial interface (I^2C) is the physical transport for board to board communication. The diagram in figure 2 shows this systems management implementation.

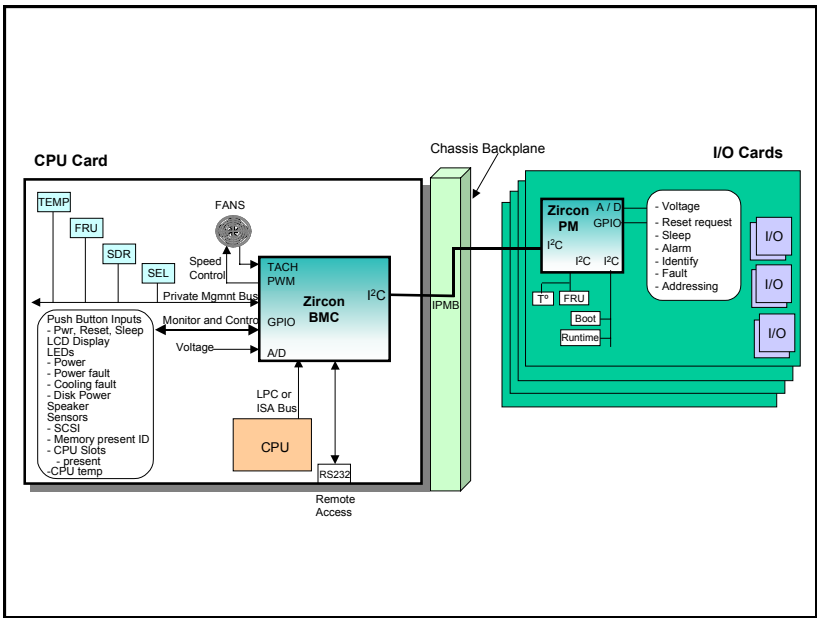

Figure 2. CompactPCI System Management Architecture

Applications

Zircon PM is an IPMI-based peripheral management controller that resides on CompactPCI I/O boards. Other applications include use as a management controller for front panels, power supplies and fan modules which require intelligent management capabilities and IPMI support. Figure 3 shows a typical application for Zircon and the Zircon PM within a CompactPCI environment.

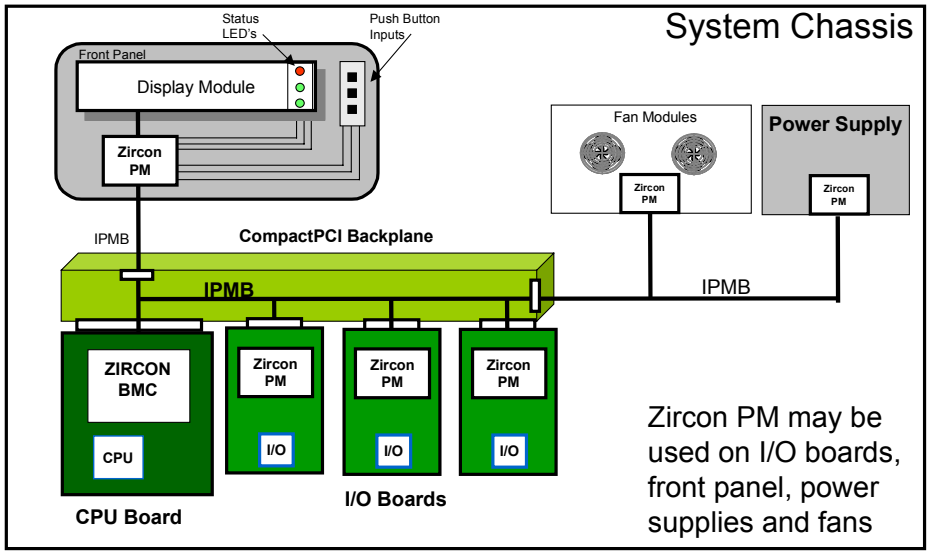

Figure 3. CompactPCI Application for Zircon PM

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