

Features

- Single, dual, and quad PowerPC G4 processor boards
- 2 MB L2 cache per CPU
- 64 to 512 MB memory per CPU board
- Standard 6U VME chassis with disk, tape, and CD-ROM options
- Closely-coupled systems up to 8 processor boards (32 CPUs) in a single VME chassis
- High-speed direct P0-PCI link for inter-board communication
- Loosely-coupled multiprocessors linked by Ethernet LAN
- A wide range of I/O interface and VME controller options
- 10/100BaseT Ethernet
- Ultra SCSI
- Two or four asynchronous RS-232 ports per processor board
- Time-of-day clock/calendar with battery backup
- Four 32-bit programmable real-time counter/timers

PowerWorks Software

- PowerMAX™ OS real-time UNIX®-based operating system
 - POSIX 1003.1, .1b and .1c
 - SVID 4.2ESMP
 - XPG4 base
- ANSI C/C++, FORTRAN and Ada compilers
- Altivec subroutine library
- NightGraphics™ with X and OpenGL
- NightStar™ real-time GUI development tools



Power Hawk™ Series 700 Multiprocessing Systems



Overview

The Power Hawk Series 700 is Concurrent's high-performance computer system for real-time data acquisition, simulation, and industrial systems applications. Power Hawk Series 700 processor boards contain one, two, or four PowerPC™ G4 CPUs and up to 512 MB of memory on a single VME card.

Series 700 systems offer leading-edge integrated circuit and packaging technology. The dual-CPU and quad-CPU Series 700 processor boards are true symmetric multiprocessors (SMP) that run a single copy of Concurrent's PowerMAX™ OS real-time operating system. All CPUs on a board are linked by a high-speed PowerPC processor bus and have direct, cache-coherent access to all of on-board main memory.

PowerPC G4 Processor

The Series 700 PowerPC G4 CPU is the first microprocessor that can deliver sustained performance of over 1 Gflop. The G4 CPU can process data in 128-bit segments, rather than the 32-bit or 64-bit segments of traditional

processors. The G4 Altivec vector instruction set can perform 4, 8, or 16 calculations in a single cycle – providing IEEE FP four times faster than non-vector processors.

Multiple Series 700 processor boards can be mixed and matched in flexible closely-coupled and loosely-coupled multiprocessor configurations to meet individual application processing needs.

Real-Time Performance and Determinism

At the heart of each Power Hawk Series 700 system is Concurrent's PowerMAX OS real-time UNIX-based operating system. In single-board SMP systems, PowerMAX OS delivers enhanced real-time performance and determinism. In closely-coupled multi-board systems, PowerMAX OS allows applications to use the same interprocess communication mechanisms and achieve the same determinism as in an SMP system. Application processes executing on any CPU board can share data, send

Real-Time... Real Benefits

Series 700 Closely-Coupled System

messages, generate interrupts, and respond to interrupts from processes running on any other CPU board. Processes can also access a common synchronized clock source.

Closely-Coupled High-Speed PO-PCI Link

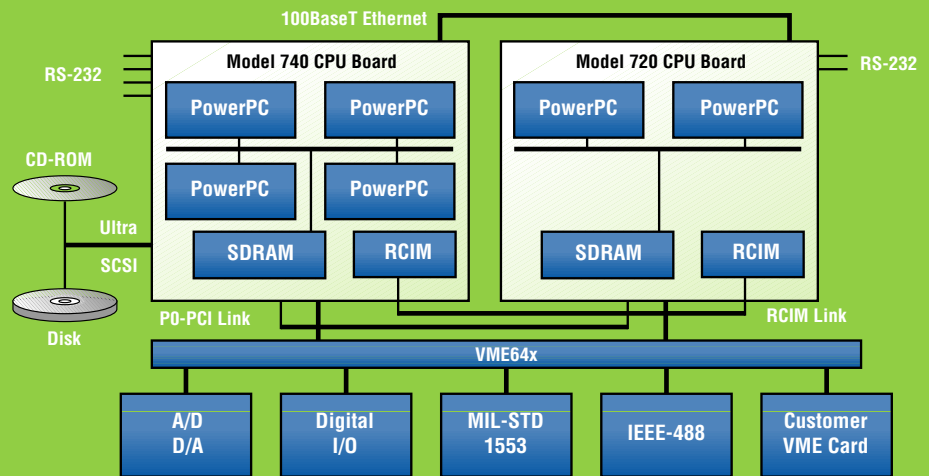
Closely-coupled Series 700 CPU boards communicate directly over a 264 MB/sec PO-PCI secondary bus link. PO-PCI greatly enhances interprocess data sharing and real-time determinism. PowerMAX OS offers a choice of inter-CPU communication features designed to allow application processes to exchange information depending upon individual performance and data size requirements.

Real-Time Clock & Interrupt Module

The Power Hawk's optional Real-Time Clock & Interrupt Module (RCIM) is a multifunction PMC card designed for time-critical applications that require rapid response to external events. Installed on a processor board's PMC slot, the RCIM includes a synchronized clock readable by all applications tasks, four programmable real-time clocks, and four input and four output external interrupt lines. The RCIM is fully supported by PowerMAX OS.

Custom Engineering From Concurrent

Concurrent's Custom Engineering group is available to design and deliver Power Hawk solutions for customers who require features and functionality not included in Concurrent's product catalog. Concurrent engineers can develop special packaging including ruggedized and conduction-cooled enclosures, integrate third-party boards, develop drivers, and provide hardware and software designed to exact customer specifications.



Specifications

Processor Boards

- Model 710 – single PowerPC G4
- Model 720 – dual PowerPC G4
- Model 740 – quad PowerPC G4

Memory

- 64, 128, 256, or 512 MB 66 MHz SDRAM
- 2 MB L2 Cache per CPU
- 8 MB Flash
- 128 KB NVRAM and clock/calendar

I/O Interfaces

- VME64x (5-row), A32, D64
 - PCI bus to VMEbus link
- PMC, 64-bit 33 MHz
- Optional 264 MB/sec PO-PCI Secondary Bus Bridge, 64-bit 33 MHz (Models 720 & 740)

Processor On-Board I/O

- 10/100BaseT Ethernet
- 2 RS232 ports (Models 710 & 720)
- 4 RS232 ports (Model 740)
- Ultra SCSI

Optional I/O Controllers

- 16-line asynchronous serial mux with RS-232 and RS-422
- Single, dual, and quad-port 10/100BaseT Ethernet
- Single and dual attach FDDI
- IEEE-488 GPIB
- MIL-STD-1553B with BC, RT and BM functions
- Single and dual-port Fast and Wide SCSI-2, S-E and Differential

- Graphics PMC cards
- A/D, D/A and digital I/O
- Real-Time Clock & Interrupt Module (RCIM)
- PMC Expander Modules

Peripherals

- 9, 18, and 36 GB low profile 3.5" fixed and removable disk drives
- CD-ROM
- 4mm DAT cartridge tape drive
- X terminal and ASCII terminal consoles

Chassis

- 12-slot and 21-slot 6U VME
- Integral peripheral bays
- Autoranging power supplies
- Rackmount and table-top options
- Optional ruggedized and ATR packaging

Environmental

- Operating temperature: 10° to 50° C
- Storage temperature: -40° to 85° C
- Relative humidity: 0% to 85%, non-condensing
- Altitude: 10,000 feet

Regulatory

- Safety: UL and CSA
- EMI/RFI: FCC Class A

Service and Support

- Hardware Return-To-Factory (RTF) warranty
 - 90 days on all hardware items
 - Optional extended warranty
 - 15-day repair or replacement
- Optional software warranty
 - Telephone advisory support
 - Product improvements
 - New releases
 - Patches to reported problems
- Support options
 - On-site hardware maintenance
 - Software maintenance agreements
 - Field installation
 - Per-call maintenance service
 - Consulting services
 - Migration assistance
 - Training at a Concurrent facility or on-site
- Custom engineering
 - Hardware/software integration
 - Device drivers
 - Customized packaging



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