

Features

- Single, Dual and Quad PowerPC MPC7457 processor boards
- 2 MB L3 DDR cache per CPU
- 256 MB to 2 GB SDRAM memory
- Standard 6U VME chassis with disk, tape and CD-ROM options
- On-board PMC slots
- Optional three-slot PMC expander card
- On-board 10/100BaseT and Gigabit Ethernet ports
- On-board RS-232 serial ports
- Ultra SCSI PMC
- I/O convenience panel for serial and Ethernet port access
- A wide range of VME and PMC I/O controller options
- Time-of-day clock/calendar with battery backup
- Nine 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
- NightStar™ real-time GUI development tools
- NightGraphics™ with X and OpenGL
- Application software compatibility with Power Hawk Series 600, 700 and legacy systems



Power Hawk™ Series 900 Multiprocessing Systems



Overview

The Power Hawk Series 900 is Concurrent's high-performance VME computer system for data acquisition, simulation and industrial systems applications. Power Hawk Series 900 processor boards contain one, two or four PowerPC MPC7457 CPUs and up to 2 GB of memory on a single-slot 6U VME card.

Series 900 systems offer leading-edge integrated circuit and packaging technology. Dual and quad-CPU Series 900 processor boards are true symmetric multiprocessors (SMP) that run a single copy of Concurrent's PowerMAX OS real-time operating system. CPUs are linked by a high-speed PowerPC processor bus and have direct, cache-coherent access to all of on-board main memory.

Advanced PowerPC 7457 Processors

Power Hawk Series 900 features the advanced generation PowerPC MPC7457 processor. Each CPU offers three levels of cache for increased speed and efficiency over previous generation G4 systems. 64 KB L1 and 256 KB L2 cache are integrated on-chip with L2 operating at speeds approaching the frequency of the

processor. The 2 MB L3 backside cache is Double Data Rate (DDR) enhanced for faster data throughput. The Series 900 also features a Discovery™ single-chip, advanced system controller that integrates memory, dual PCI busses and I/O functionality, all linked via a high-bandwidth crossbar fabric. The PowerPC's AltiVec vector instruction set can also perform 4, 8, or 16 calculations in a single cycle -- providing IEEE FP four times faster than non-vector processors.

Real-Time Performance and Determinism

At the heart of each Power Hawk Series 900 system is Concurrent's PowerMAX OS real-time UNIX-based operating system. In dual and quad-CPU systems, PowerMAX OS delivers enhanced real-time performance and determinism with guaranteed interrupt response for time-critical applications. Processes executing on any CPU can share data, send messages, generate interrupts, and respond to interrupts from processes running on any other CPU. Processes can also access a common synchronized clock source. PowerMAX OS offers a choice of inter-CPU communication features designed

Integrated Solutions... Real Benefits

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-sensitive applications that require rapid response to external events. Installed on a processor board or expansion 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. The synchronized clock can be externally cabled to allow multiple systems to operate from a single clock source.

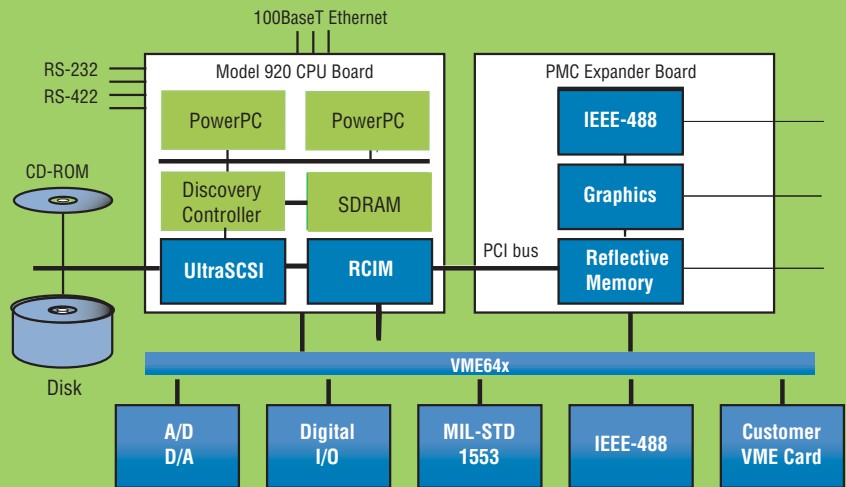
Real-Time Development Tools

The Series 900 supports Concurrent's popular NightStar™ GUI-based development tools. Users can schedule, monitor, debug, and analyze their real-time applications locally or remotely from a PC or laptop. Each tool runs on the target system non-intrusively, thus preserving the determinism of the application. NightStar tools enable system builders to reduce software development time and maximize productivity when developing applications.

Custom Engineering From Concurrent

Concurrent's Professional Services group is available to design and deliver Power Hawk solutions for customers who require complete competitive solutions for demanding mission-critical applications. Concurrent engineers can develop special packaging including ruggedized and conduction-cooled enclosures, integrate third-party I/O cards, develop drivers, and provide hardware and software designed to exact customer specifications.

Example Series 900 Dual Processor with PMC Expansion



Specifications

Processor Boards

- Model 910 - single PowerPC 7457
- Model 920 - dual PowerPC 7457
- Model 940 - quad PowerPC 7457

Memory

- 256 MB, 512 MB, 1 GB or 2 GB SDRAM ECC and parity
- 2 MB L2 Cache per CPU
- 64 MB to 1 GB Flash
- 128 KB NVRAM and clock/calendar

I/O Interfaces

- VME64x (5-row), A32, D64 - PCI-to-VMEbus link
- PCI Bus 0 -- PMC I/O, 32/64-bit 33/66 MHz
- PCI Bus 1 -- VME and integral I/O

Model 910/920 Onboard I/O

- Three 10/100BaseT Ethernet ports
- Two RS-232D ports
- Two PMC slots

Model 940 Onboard I/O

- Two 10/100/1000BaseT Gigabit Ethernet ports
- Four RS-232D ports
- One PMC slot

Optional I/O Controllers

- Ultra160 SCSI PMC module
- 16-line asynchronous serial mux with RS232, RS-422 and RS-485
- Single and quad-port 10/100BaseT Ethernet
- IEEE-488 GPIB

- MIL-STD-1553B with BC, RT and BM functions
- Single and quad-head Graphics PMC cards
- A/D, D/A and Digital I/O
- Reflective Memory
- 3-slot PMC Expander Module

Real-Time Clock & Interrupt Module

- Synchronized Clock
- 4 programmable real-time interrupt clocks
- 4 input edge-triggered interrupt lines
- 4 output interrupt lines

Peripherals

- 36, 73 and 146 GB low-profile 3.5" fixed and removable disk drives
- CD-ROM
- 4mm DAT cartridge tape drive
- ASCII terminal consoles

Chassis

- 12-slot and 21-slot 6U VME
- Integral peripheral bays
- Autoranging power supplies
- Optional VME and PCI expansion chassis
- Optional ruggedized and ATR packaging

Environmental

- Operating temperature: 10 to 50 degrees C
- Extended Range Option: 20 to 71 degrees C
- Storage temperature: -50 to 100 degrees C

- Relative humidity: 10% to 90%, 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
 - 30-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
- Professional Services
 - Hardware/software integration
 - Device drivers
 - Customized packaging



2881 Gateway Drive
Pompano Beach, Florida 33069
Phone: 1-800-666-4544 or 954-974-1700,
Sales or Marketing Support
FAX: 954-973-5398
E-mail: isd.info@ccur.com • www.ccur.com

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