

Features

- Tightly-coupled symmetric multiprocessing (SMP) systems
- One to eight Intel® Pentium® Xeon™ processors
- Up to 2 MB of L2/L3 cache per CPU
- 128 MB to 32 GB of memory per system
- Tower or rackmount chassis with disk, tape, and CD-ROM/RW
- 10/100/1000BaseT Ethernet
- Ultra160 SCSI
- Real-Time Clock & Interrupt Module
- A wide range of I/O interface and PCI controller options
- Keyboard, mouse, and serial ports
- Optional VME I/O subsystems
- Optional high-performance 3D graphics with OpenGL

RedHawk™ Linux® Software

- RedHawk Linux real-time operating system
- GNU C, C++, and Fortran compilers
- Real-time development tools
 - NightView™ source-level debugger
 - NightTrace™ analyzer
 - NightSim™ periodic scheduler
 - NightProbe™ data monitor



iHawk™ Series 860 Real-Time Multiprocessors



Overview

The iHawk™ Series 860 is Concurrent Computer Corporation's high-performance PCI-based computer platform for real-time data acquisition, simulation, and industrial systems applications. The iHawk 860 features from one to eight Intel® Pentium® Xeon™ processors and up to 32 GB of memory in a single rackmount or tower enclosure.

iHawk 860 systems offer leading-edge integrated circuit and packaging technology. iHawk 860s are true symmetric multiprocessors (SMP) that run a single copy of Concurrent's RedHawk™ Linux® real-time operating system. All CPUs in a system are linked by a high-speed front-side processor bus and have direct, cache-coherent access to all of main memory.

Intel Pentium Xeon Processor

The iHawk 860's Intel Pentium Xeon processor is ideally suited for advanced real-time computing needs. The Xeon's Dynamic Independent Bus architecture features a dedicated external high-performance system bus and a separate dedicated internal cache bus operating at full processor core speed. The Pentium Xeon is

available in L2 caches sizes of up to 2 MB to meet a range of performance needs.

RedHawk Linux Performance and Determinism

At the heart of each iHawk 860 system is Concurrent's RedHawk Linux real-time operating system. Based on the popular Red Hat® Linux distribution, RedHawk Linux features high I/O throughput, fast response to external events, and optimized interprocess communication. RedHawk is the ideal Linux environment for complex real-time applications. RedHawk is based upon a multithreaded, fully preemptible Linux kernel with low-latency enhancements. RedHawk's true symmetric multiprocessing support includes load-balancing and CPU shielding to maximize determinism and real-time performance in mission-critical solutions.

RedHawk Linux supports Concurrent's powerful set of NightStar™ development tools. Users can schedule, monitor, debug, and analyze their real-time applications on iHawk multiprocessor systems or remotely from a desktop PC or laptop.

Real-Time... Real Benefits

Each tool runs on the iHawk target system non-intrusively, thus preserving the deterministic characteristics of the real-time application.

Real-Time Clock & Interrupt Module

The iHawk's Real-Time Clock & Interrupt Module (RCIM) is a multifunction PCI card designed for time-critical applications that require rapid response to external events. The RCIM includes a synchronized clock readable by multiple iHawk systems, four programmable timers, and four input and four output external interrupt lines. The RCIM is fully supported by RedHawk Linux.

Flexible Packaging

iHawk 860 systems come in standard tower and rackmount enclosures with up to eleven integral 32/64-bit PCI slots and optional PCI-to-PCI expansion chassis. For users who require a VME I/O subsystem, an optional PCI-to-VME bridge and chassis is available. iHawk 860 systems can be configured with up to eight SCSI disk drives with optional RAID capability.

Custom Engineering From Concurrent

Concurrent's Professional Services Group is available to design and deliver iHawk systems for customers who require complete competitive solutions for demanding real-time applications. Concurrent engineers can provide special packaging including ruggedized peripherals and enclosures, integrate third-party I/O cards, develop and integrate RedHawk Linux drivers, and perform application rehosting. Hardware and software is designed and developed to exact customer specifications.



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Specifications

Processors

- 1 to 8 Intel® Pentium® Xeon™ Processors
- 20 KB L1 cache per CPU
- 512 KB, 1 MB, or 2 MB L2/L3 cache per CPU

Memory

- 128 MB to 32 GB ECC SDRAM

I/O Busses

- 3 to 11 PCI slots (optional hot swap)
 - 64-bit 66/100 MHz
 - 32-bit 33 MHz
- 7/13-slot PCI expansion chassis
- VME64 (via PCI-to-VME bridge)

Integral I/O

- 10/100/1000BaseT Ethernet
- RS-232 serial ports
- USB ports
- Dual channel Ultra SCSI
- Parallel port
- Video port
- SVGA graphics controller

Standard Peripherals

- 36 and 73 GB SCSI disks
- CD-ROM or CD-RW drives
- 3.5" 1.44 MB floppy
- 20/40 GB DAT drive
- Keyboard/Mouse

Optional PCI I/O Controllers

- RS-232/422 asynchronous mux
- Multiport 10/100/1000BaseT Ethernet
- IEEE-488 GPIB
- MIL-STD-1553B with BC, RT, and BM functions
- ARINC 429
- A/D, D/A, and digital I/O
- Reflective memory

Enclosures

- Mini-tower and full-tower chassis
- Rackmountable chassis (3.3", 6.88" or 12.25" high)
- 2 to 8 peripheral bays

Environmental

- Operating Temperature:
10° C to 35° C (50° F to 95° F)
- Storage Temperature:
-40° C to 65° C (-40° F to 149° F)
- Relative Humidity:
8% to 80%, non-condensing

- Operating Vibration:
0.25G at 3Hz to 200 Hz for 15 min
- Storage Vibration:
0.5G at 3Hz to 200 Hz for 15 min
- Operating Shock:
6 shock pulses of 50G for up to 2 ms,
- Storage Shock:
6 shock pulses of 92G for up to 2 ms
- Operating Altitude:
-16 m to 3,048 m (-50 ft to 10,000 ft)
- Storage Altitude:
-16 m to 10,600 m (-50 ft to 35,000 ft)

Regulatory

- FCC Class A (U.S.) and DOC Class A (Canada)
- CE Mark (EN 55022 Class B, EN55024, EN61000-3-2, EN61000-3-3, EN60950)
- VCCI Class A
- UL 1950
- CSA 950
- EN and IEC 60950

Service and Support

- Hardware return-to-factory (RTF) warranty
- On-site support
- Extended warranty
- Software support
 - Telephone advisory support
 - Product improvements
 - New releases
 - Patches to reported problems
- Other support options
 - 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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