

# Rimfire 3220

## VMEbus SMD-E Disk Controller

### For Sun-3<sup>®</sup> And Sun-4<sup>®</sup> Workstations

**Highest performance disk controller available**

**Designed specifically for Sun Microsystems Workstations**

**Sun Boot Compatible**

**Sun form factor**

The disk sub system is a vital component in your Sun Workstations ability to provide the performance you expect. The Rimfire 3220 provides the disk subsystem performance needed to substantially improve the throughput of new or existing Sun Workstations. The important features and benefits of the Rimfire 3220 are:

**The Rimfire 3220 provides two to three times the performance** of current Sun Microsystems and other third party SMD disk controllers. The Rimfire 3220 controller is an easily integrated and cost effective way to enhance the disk I/O throughput capability of Sun-3 and Sun-4 workstations and file servers.

**The Rimfire 3220 is compatible with the boot software** of Sun-3 and Sun-4 Workstations. There is no need to modify Sun hardware or software.

**The Rimfire 3220 is compatible with prior releases of SunOS<sup>®</sup> 3.X** as well as the latest release of SunOS 4.X. Other solutions require you to upgrade to SunOS 4.0 prior to installing the latest generation disk controllers.

**A 512-Kbyte dynamically allocated cache memory and high performance 80186 microprocessor**, coupled with high speed disk and bus interfaces, are the foundation for superior disk throughput. The large segmented cache retains multiple tracks of disk data from multiple user applications in controller resident memory. This improves the probability that future disk data requests are in cache, resulting in substantial improvements in throughput not possible in FIFO-based controller designs.

**Multiple circular command queues**, designed with Unix<sup>®</sup> system software in mind, link the SunOS operating system and the Rimfire 3220 controller. Each queue receives requests from the operating system driver asynchronously and without handshake timing restrictions. With access to all pending disk requests, the Rimfire 3220 controller will improve disk subsystem performance by optimizing disk head motion and minimizing disk accesses.

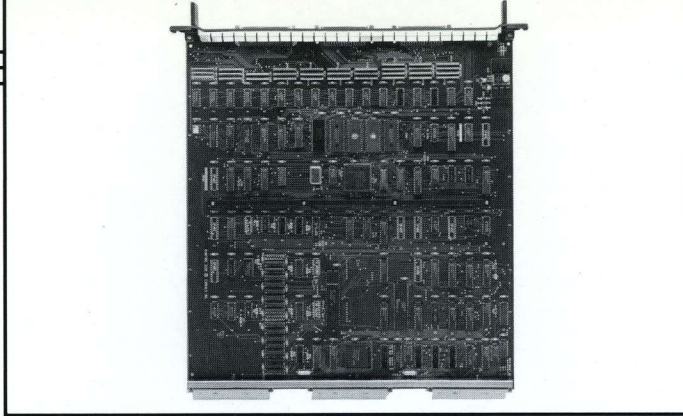
**To increase throughput, lookahead caching** takes advantage of the tendency for data files to be stored sequentially on disks. Disk data subsequent to a specific request are pre-read into the controller's cache memory. Because files may span track boundaries, cross-track lookahead pre-reads multiple tracks without losing disk revolutions. Future sequential requests are satisfied directly from the cache, eliminating a time consuming disk access.

**The Rimfire 3220 incorporates advanced data management techniques** such as command combining and scatter/gather. Combining multiple commands and executing in one operation increases the throughput of the disk subsystem.

**Support is provided for the SMD-E disk drives of all popular suppliers** at data rates up to 3 megabytes per second. The highest transfer rate disk drives improve overall I/O throughput.



## Rimfire 3220 VMEbus SMD-E Sun-sized Disk Controller With Boot Capability



□ With a VMEbus transfer rate capability of 30 megabytes/second, the Rimfire 3220 controller uses only a small fraction of the Sun system's available bus bandwidth for data transfers. This performance feature minimizes system bus contention.

□ The Rimfire 3220 can be intermixed with controllers of Sun Microsystems and other third party manufacturers. The same high performance is present whether the Rimfire 3220 is configured as the primary boot disk controller or as a secondary disk controller.

□ Disk drive formatting utility programs are available to format SMD-E disk drives from all popular suppliers, either off-line or on-line. These utility programs use the disk supplier's media flaw map to deallocate the media defects and format all the tracks.

□ Installation software available from Ciprico simplifies the integration of the Rimfire 3220 device driver into the SunOS kernel. A detailed understanding and knowledge of SunOS is not required.

□ Media defect management is provided by Ciprico drive formatting utility programs and on board firmware routines. Media flaws are effectively bypassed by using sophisticated sector slipping and alternate sector algorithms, protecting your valuable data.

□ A proprietary computer generated 48-bit error correction code is automatically appended to each sector of user data. This assures recovery from occasional disk drive read errors.

□ Automatic power up diagnostics are included. All major board functions are checked before operation begins.

□ All Ciprico products are manufactured to exacting quality standards. The Rimfire 3220 controller is covered by a 1 year warranty.

□ The Rimfire 3220 controller has the same physical dimensions as Sun's triple high and wide cards, allowing installation into a single slot of a Sun-3 or Sun-4 workstation. The cost, cable complexity, and non-standard appearance of a 6U to 9U VMEbus adapter card is avoided.

□ EMI shielded I/O cable connectors and faceplate are standard. The I/O cable and faceplate shield conforms to FCC specifications on electromagnetic interference suppression. This protects other site equipment from high frequency emissions.

□ Up to four SMD drives per controller are supported. A valuable feature if board slots are limited on your system. Multiple lower capacity drives provide higher performance than one large capacity drive.

□ SMD interfaced disk drives can be intermixed on the same controller. This provides needed flexibility when selecting a disk vendor, upgrading subsystems, and utilizing existing disk inventory.

□ VMEbus Interface. Compatible with Sun Workstations and Revision C.1 of the VMEbus specification. Data transfers of 8, 16, and 32 bits are supported, with addressing capability of 16, 24, and 32 bits.

□ Physical size. Single slot, triple height, full depth Euro-card 367 x 400 mm, 9U form factor board.

□ Electrical. 5 volts at 5 amps typical, and -12 volts at 0.5 amps typical.

□ Environmental. 0-55 degrees Celsius ambient temperature. 200 linear feet/minute air flow.

## RIMFIRE 3223 - Bootable, Shielded I/O Connectors

### Accessories

- Utility and installation software - 1/2" tape
- Utility and installation software - 1/4" cartridge tape
- Rimfire 3223 "A" Cable (Cable to first drive)
- Rimfire 3223 "B" Cable (Cables for two drives)

### Part Number

- SSP3223/1
- SSP3223/2
- 81010098
- 81010097

For more information on the Rimfire 3220 contact:



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