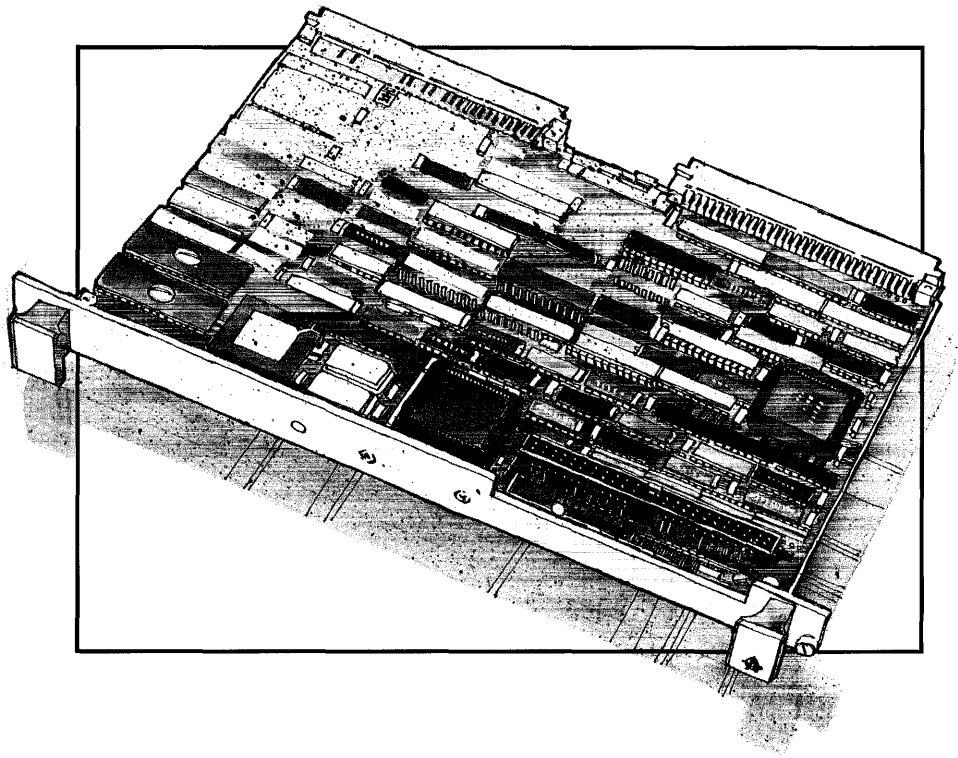
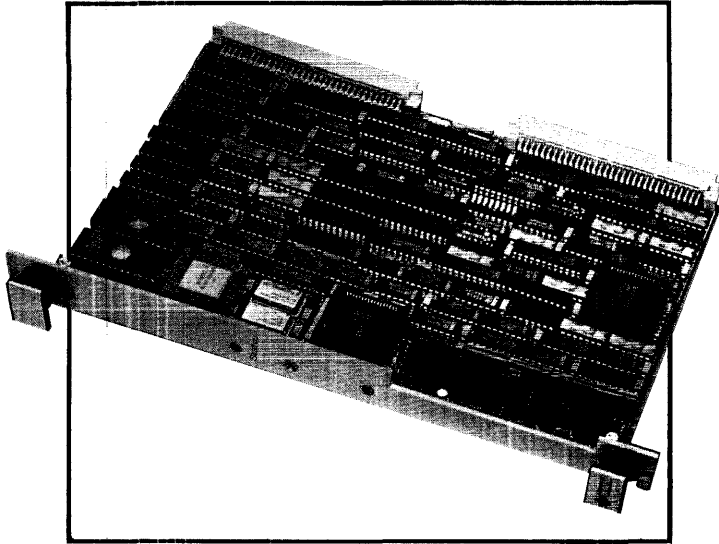


V/SMD 4200 Cheetah
High-performance
VMEbus Storage
Module Device (SMD)
Disk Controller



V/SMD 4200 Cheetah



A Powerful VMEbus SMD Disk Controller

Interphase Corporation's V/SMD 3200 SMD disk controller was the first high-performance 32-bit SMD disk controller developed for the VMEbus. Today it remains the standard by which the rest of the industry is measured.

While others were still trying to deliver their first generation VME products, Interphase introduced the V/SMD 4200 Cheetah – an enhanced version of our popular V/SMD 3200 product, with higher bus rates and exclusive features you demand. Bus throughput of 30 MB/s and above is attainable using the Interphase exclusive BUSpacket InterfaceSM. This proprietary feature, along with the already proven features of the original V/SMD 3200, including multitasking Virtual Buffer ArchitectureSM, UNIX[®]-optimized Intelligent Caching, and zero latency reads and writes makes other controllers obsolete by comparison.

The V/SMD 4200 Cheetah is software compatible with the V/SMD 3200, as well as its sister product V/ESDI 3201 (ESDI disk controller), making it the only choice for **PLUG & PLAY** replacements.

The V/SMD 4200 Cheetah is a member of the family of Interphase products for the VMEbus and represents a commitment to design excellence and absolute superiority in:

- Performance
- Ease of integration
- Design assistance and support
- Reliability

It is but one modular element in the Interphase comprehensive systems approach to high-performance VMEbus product development.

POWERFUL AND SMART

The V/SMD 4200 Cheetah is a powerful and intelligent controller for Storage Module Device (SMD) type drives, including Extended SMD drives, with data rates up to 24 Mb/s. The V/SMD 4200 Cheetah interfaces these mass storage systems to the VMEbus through a unique and extremely high-performance design.

Using a 68000 microprocessor and the unique BUSpacket Interface, the V/SMD 4200 Cheetah gives you speed and sophistication unmatched in the industry. The V/SMD 4200 Cheetah's exclusive Virtual Buffer Architecture means that data transfer delays are radically reduced or eliminated. Couple these benefits with a 128K buffer, allowing more effective use of Interphase Intelligent Caching, and it is easy to see how the V/SMD 4200 Cheetah is the performance leader of the future.

HIGH SPEED

The V/SMD 4200 Cheetah moves and manages data with extraordinary speed. Through the multitasking Virtual Buffer Architecture, simultaneous data movement between the V/SMD 4200 Cheetah and the bus and the V/SMD 4200 Cheetah and system peripherals is possible. The on-board 68000 microprocessor supervises all activity, including the management of a pool of data buffers.

BUSpacket InterfaceSM

The exclusive BUSpacket Interface is the key to VMEbus data rates. It achieves 30 MB/s by decoupling bus activity from on-board functionality through the use of very fast bus FIFOs and a unique delay line-based asynchronous state machine that controls VMEbus signaling.

The BUSpacket Interface operates by preformatting "packets" of data and storing them in very fast bus FIFO-holding registers prior to acquiring the bus. Once the bus is acquired, the FIFO is emptied at up to 30 MB/s and the bus is released for other uses. This drastically reduces bus bandwidth usage with corresponding improvements in overall system performance.

VIRTUAL BUFFERING

ZERO LATENCY

The Interphase Virtual Buffer Architecture is the key to zero latency operation. The V/SMD 4200 Cheetah processor allocates and deallocates the buffers for various system processes. This design feature eliminates read overruns and write underruns often found in less sophisticated FIFO-based designs. Traditional controllers wait to read and transfer data until they encounter the first requested sector. Using a 128K pool of dynamically allocated buffers, the V/SMD 4200 Cheetah begins reading data as soon as the head lands on the track and then

immediately transfers all sectors of interest regardless of their order on disk. This process allows the V/SMD 4200 Cheetah to never take more than a single disk revolution to transfer an entire track of data.

INTELLIGENT CACHING

Another advantage of the virtual buffer design is that after requested sectors are read and transferred, the V/SMD 4200 Cheetah will continue to read and cache sectors. Then, if subsequent requests from the host are made for that data, the V/SMD 4200 Cheetah can transfer that data from cache without disk access and with no need for block interleaving by the operating system.

The V/SMD 4200 Cheetah's 128K buffer allows multiple tracks of data to be stored, increasing the effectiveness of the caching features. The larger buffer also provides the capability to develop application specific caching algorithms to improve system performance.

GOOD FOR UNIX

The V/SMD 4200 Cheetah enhances the performance of UNIX and UNIX look-alikes. It provides enhanced throughput for both large and small transactions. Tests have demonstrated that Interphase's Intelligent Caching yields improvements of up to 40% over cacheless 1:1 interleave techniques for file-oriented transactions. The need for block interleaving is completely eliminated.

FLEXIBILITY

The V/SMD 4200 Cheetah supports a wide range of system variations with a number of programmable system parameters, including burst rates, multiple interrupt vectors, and all variable bus configurations. The V/SMD 4200 Cheetah also accommodates virtually any type of SMD drive using a simple memory resident method of setting parameters for each attached unit when the system is initialized.

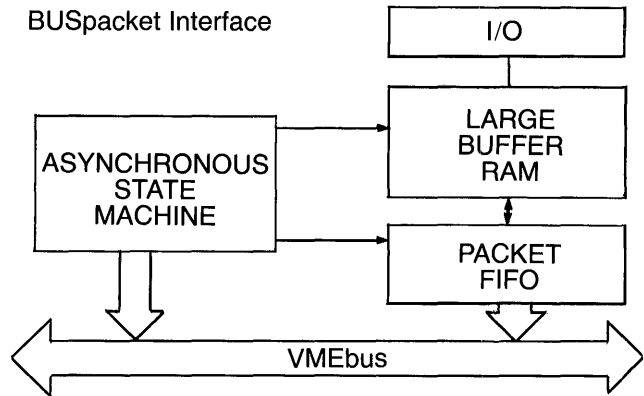
It is software compatible across the board—with the V/SMD 3200 as well as with the V/ESDI 3201, ESDI disk controller—giving you **PLUG & PLAY** compatibility, more system options, and less development expenditure time.

EASY TO DESIGN IN

Interphase provides two powerful resources with V/SMD 4200 Cheetah or any other Interphase family product. Unique to Interphase and available to you are the services of:

- The Design Assistance Group
- The Applications Engineering Group

Depending on your specific design and applications requirements, one or both of these Interphase teams can be made available to solve special problems, assist with actual project decisions or help build a system outright.



A SUMMARY OF FEATURES

- Virtual Buffer Architecture with On-board 68000 Microprocessor
- Supports Two SMD or SMD-E Disk Drives On Board
- Optional Expander to Support Two Additional SMD Disk Drives
- UNIX-optimized Intelligent Caching
- Zero Latency Reads and Writes
- 16- or 32-bit Data Transfers
- 16-, 24-, or 32-bit Addressing
- Disk Data Rates to 24 Mb/s with 1:1 Interleave
- 30 MB/s DMA with Buspacket Interface
- 128K Cache Buffer
- Supports Bus Throttling and Bus Clear
- Supports Dual Ported Drives
- Advanced Open Cable Detection and VMEbus ACFail Support
- On-board Error Correction - 32-bit or 48-bit ECC
- Fully Software Compatible with V/SMD 3200 and V/ESDI 3201
- Software Programmable Interrupt Levels (1-7)
- Selectable Bus Priority (0-3)
- Scatter/Gather Commands
- Single VME Double-height Board
- Software Drivers Available

THE NEXT STEP

Interphase is ready to help you get that project up and running... NOW. All you need do is tell us you want an Evaluation Reference Guide for the V/SMD 4200 Cheetah, or even better, that you want to receive the V/SMD 4200 Cheetah as part of our First Time User Program.

The Evaluation Reference Guide contains detailed specifications and other important operational information you need to get started. The First Time User Program permits hands-on evaluation of the V/SMD 4200 Cheetah and puts you in contact with our Design Assistance Group.

Call us today or complete the enclosed card to take the next step. There is no obligation... except to yourself... to check out the high-performance value of the V/SMD 4200 Cheetah from Interphase Corporation.

(214) 350-9000



OPEN SYSTEMS CONTROLLERS™

Disk • Tape • Networking

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