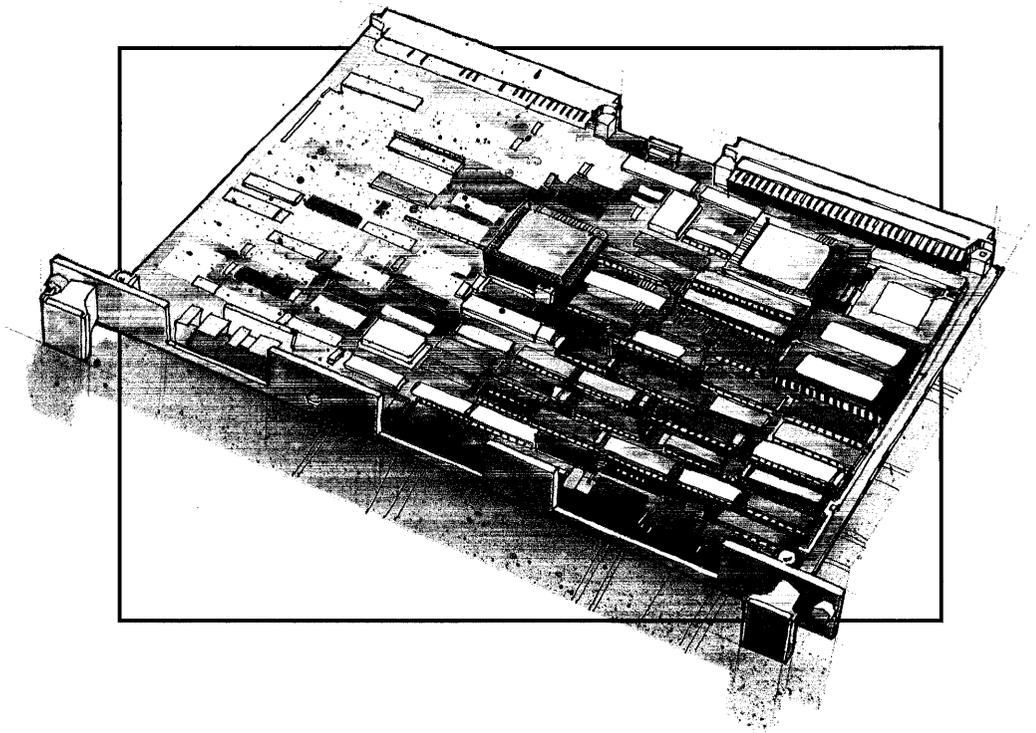
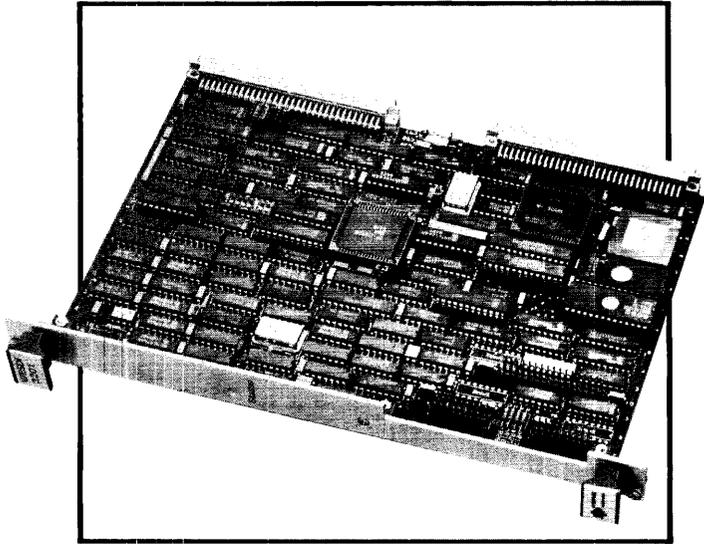


**V/ESDI 3201**  
High-performance  
VMEbus Enhanced  
Small Device Interface  
(ESDI) Disk Controller



**INTERPHASE**  
corporation

# V/ESDI 3201



## A Powerful VMEbus ESDI Disk Controller

Interphase® Corporation's V/ESDI 3201 is a high-performance ESDI disk controller that gives VME system designers superior performance levels and greater flexibility than found in other products. It is a powerful performer, with features that include Interphase's unique Virtual Buffer Architecture<sup>SM</sup>, UNIX®-optimized Intelligent Caching, and zero latency reads and writes. The V/ESDI 3201 emulates the industry standard VMEbus SMD disk controller (the Interphase V/SMD 3200), contains the same proven features, and is completely software compatible—that means **PLUG & PLAY** for a painless migration path.

The V/ESDI 3201 is a member of the family of Interphase products for 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/ESDI 3201 is a powerful and intelligent controller for 5¼" Enhanced Small Device Interface (ESDI) type drives, with potential data rates to 24 Mb/s and capacities in the hundreds of megabytes. The V/ESDI 3201 interfaces these mass storage systems to the VMEbus through a unique and extremely high-performance design.

Using a 68000 processor and two high-speed bipolar state machines, the V/ESDI 3201 gives speed and sophistication not found elsewhere.

The Interphase exclusive Virtual Buffer Architecture means that rotational latency delays are radically reduced or eliminated. Couple these benefits with Intelligent Caching, programmable disk and system parameters, and it is easy to see why the V/ESDI 3201 is the newest VMEbus showpiece for efficiency and power.

## HIGH SPEED

The V/ESDI 3201 moves and manages data with extraordinary speed. Through the multi-tasking Virtual Buffer Architecture, simultaneous data movement between the V/ESDI 3201 and the bus and the V/ESDI 3201 and system peripherals is possible. The on-board 68000 processor supervises all board activity, including the management of a pool of data buffers and the state machines.

## VIRTUAL BUFFERING

### ZERO LATENCY

The Interphase Virtual Buffer Architecture is the key to zero latency operation. The V/ESDI 3201 processor controls and allocates the buffering for various system processes. This design feature eliminates overruns and underruns often found in less sophisticated FIFO-based designs. Earlier generation controllers wait to read and transfer data until they encounter the first requested sector. Using a large pool of dynamically allocated buffers, the V/ESDI 3201 begins reading data as soon as the head lands on the track and immediately transfers sectors of interest regardless of the order they are read in. This process allows the V/ESDI 3201 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/ESDI 3201 continues to read and cache data. Then, if subsequent requests from the host are made for that data, the V/ESDI 3201 can transfer it from cache without an additional disk access.

## PLUG & PLAY

The V/ESDI 3201 protects software investments by making the user interface completely compatible with the popular V/SMD 3200 SMD disk controller. Simply use existing drivers, initialize the disk with the proper size and operating parameters, and you are up and running. The ESDI migration path is the obvious choice when SMD class performance and capacity is needed in a 5¼" form factor.

## GOOD FOR UNIX

The V/ESDI 3201 enhances the performance of UNIX and UNIX look-alikes. It provides enhanced throughput for both large and small transactions

and tests have demonstrated that Interphase's Intelligent Caching yields improvements of up to 40% over cacheless 1:1 interleave techniques for file-oriented transactions, all without the need for software interleave or UNIX *rotdelay* operating system tuning. Interphase is source code licensed for UNIX System V and 4.2 BSD to fully support your software needs.

## FLEXIBILITY

The V/ESDI 3201 supports a wide range of system parameters, including burst rates (throttling), multiple interrupt vectors, and all variable bus configurations. The V/ESDI 3201 also accommodates virtually any type of ESDI drive using a simple memory resident method of setting parameters for each attached unit when the system is initialized.

## EASY TO DESIGN IN

Interphase provides two powerful resources with the V/ESDI 3201 or any other Interphase family product. Unique to Interphase and available to you are the services of:

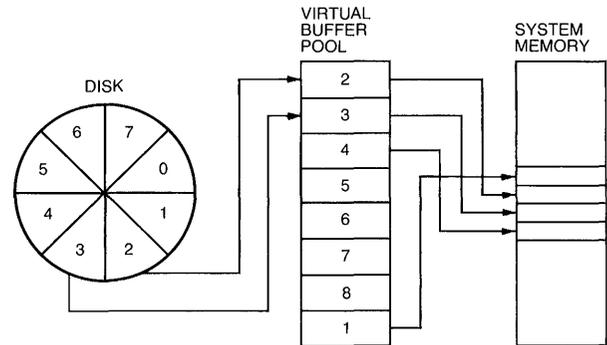
- The Design Assistance Group
- The Applications Engineering Group

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. There is always a team member prepared to assist as needed at each step of your project. From recommended parameter settings and software drivers to the most difficult system design problems, these two groups can virtually become a part of your staff.

## A SUMMARY OF FEATURES:

- Virtual Buffer Architecture with On-board 68000 Processor
- Supports Two ESDI Disk Drives On Board
- Optional Expander to Support Two Additional ESDI Disk Drives
- UNIX-optimized Intelligent Caching
- Zero Latency Reads and Writes
- **PLUG & PLAY** Software Compatible with the V/SMD 3200 SMD Disk Controller
- 8-, 16-, or 32-bit Data Transfers
- 16-, 24-, or 32-bit Addressing
- Disk Data Rates to 24 Mb/s with 1:1 Interleave
- High speed DMA with Bus Throttling and Bus Clear Support
- On-board Error Correction – 32-bit ECC
- Software Programmable Interrupt Levels (1-7)
- Selectable Bus Priority (0-3)
- Scatter/Gather Commands
- Single VME Double-height Board
- Companion to Interphase V/Tape 3209, Nine-Track, Half Inch Tape Controller
- Software Drivers on a Variety of Media

## Virtual Buffer Architecture



A typical transaction demonstrates zero latency reads and caching. The host CPU requests a Disk Read of sectors one through four. After the seek, the head lands on sector two. Data from sector two is read into an available buffer. Then, sector three is read into another buffer and so on until sector one is read. The Bus Write task works simultaneously, moving first sector two, then three, four, and finally one into system memory. At the end of the operation, sectors five, six, seven, and zero are cached. If the next host request is for any of the cached sectors, they are transferred to system memory without ANY rotational delay.

## 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/ESDI 3201, or even better, that you want to receive the V/ESDI 3201 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/ESDI 3201 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/ESDI 3201 from Interphase Corporation.

**(214) 350-9000**



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**ASK ABOUT THE REST OF THE INTERPHASE  
FAMILY OF PRODUCTS**

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