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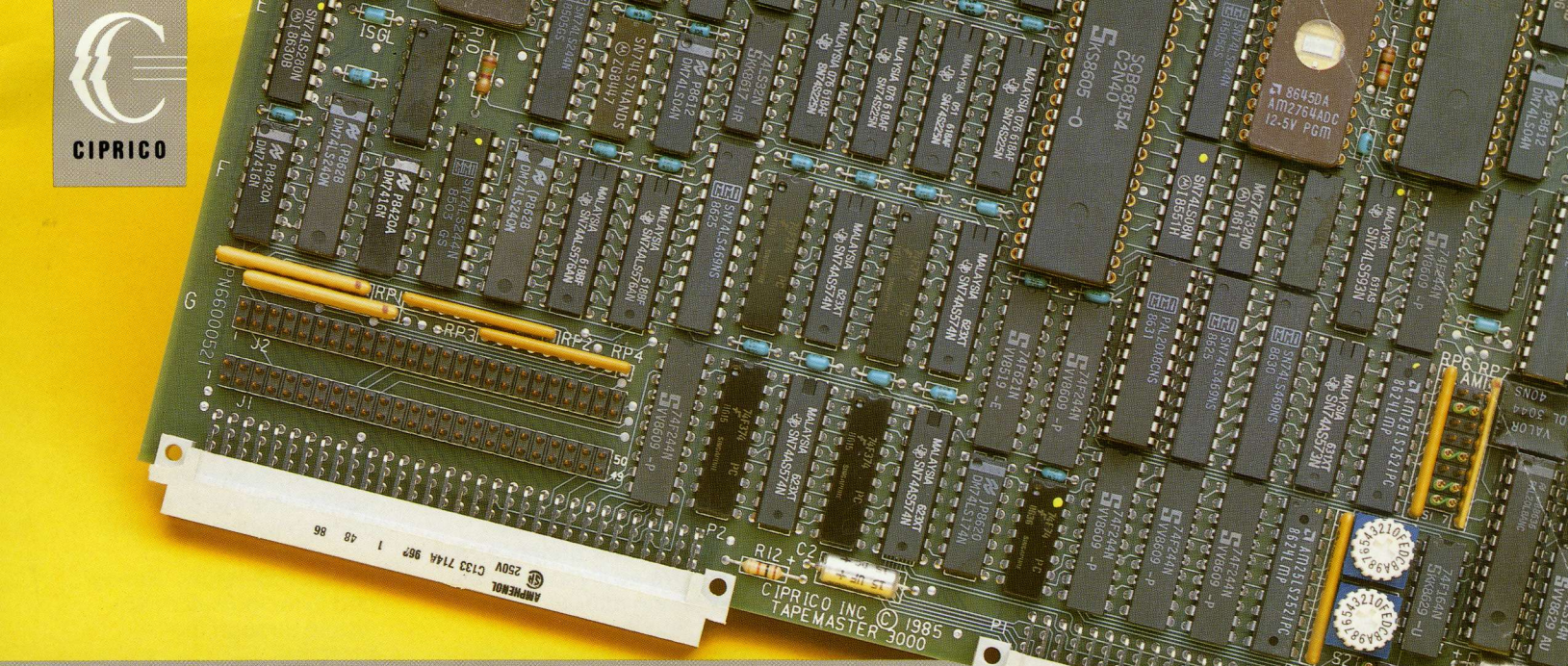
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CIPRICO



Tapemaster 3000

VMEbus Pertec Compatible ½" Tape Controller

Half-inch tape, today's most versatile mass storage back-up medium, is easily added to any VMEbus compatible system by selecting Ciprico's Tapemaster 3000 half-inch tape controller.

Tape data rates of 2 Mbytes/second.

Software interface supports streaming operations.

The ability to back-up and transport large amounts of data efficiently is a requirement frequently specified by VMEbus systems designers. Ciprico, an acknowledged authority on tape controllers, has brought years of experience to the VMEbus market with the Tapemaster 3000 Pertec compatible half-inch tape controller. Important features and benefits include:

☐ **Keeping drives streaming at GCR densities and speeds,** the board provides VMEbus users with the capability to get the most utility from their high performance tape drives. The combination of a dual FIFO architecture and an advanced command set are used to minimize the latencies that hinder streaming operations. A 4-Kbyte data FIFO and 32-byte Short Burst FIFO decouple the tape and system bus interfaces, allowing concurrent operations on both. Ring buffer operations, in addition to other advanced command techniques, minimize the software latencies which reduce throughput and impede streaming.

☐ **Flexibility, essential to solving unique problems,** is a word that describes what this controller brings to a broad range of system applications. Hardware support for byte order swapping, simplifying the interchange of tapes between different systems, is a standard feature of the Tapemaster 3000 controller. In addition, the ability to read unknown length records is useful when dealing with foreign tapes.

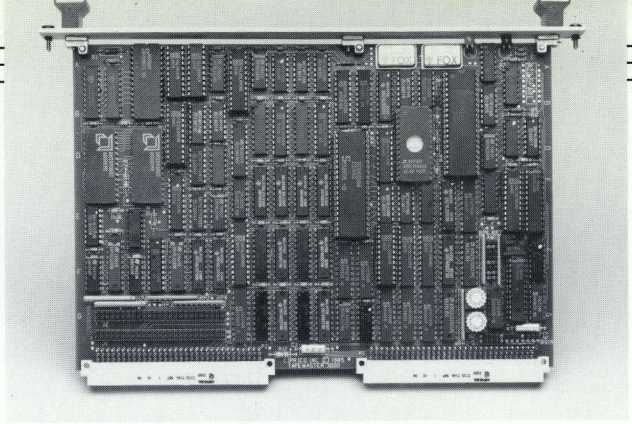
☐ **Scatter/Gather DMA transfers of tape data,** a technique which transfers records between discontiguous sections of system memory, simplifies integrating half-inch tape into high performance systems. System memory allocation techniques may require data to reside in separate fragments. The controller's Scatter/Gather capability eliminates the software that consolidates these fragments into a single buffer, further reducing the software latencies that are detrimental to streaming operations. Scatter/Gather also provides the facility to read or write records of unlimited length, useful in many data collection applications.

☐ **Easy access to the tape drive interface,** via pass through commands and programmable drive parameters, reduces the effort required to implement drive-specific features. The Pertec interface, a de facto standard, has been molded by drive manufacturers to take advantage of their value-added features. Pass through commands provide users with a means to directly access the interface and use drive specific commands, while programmable drive parameters are used to configure the controller for characteristics which vary from drive to drive.

☐ **With a tape data transfer rate capability of 2 Mbytes/second,** integrating tomorrow's tape drives will be as easy as today's. Even at the highest speeds and densities currently available, the Tapemaster 3000 tape interface uses only a small portion of its usable bandwidth. Caching tape drives with increased burst rates still don't approach the limits of the board. But as peripheral performance requirements increase over the life of a system, today's extra capability will be needed tomorrow.

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Tapemaster 3000 VMEbus Pertec Compatible ½" Tape Controller



Flexibility when selecting the make and model of tape drive, without sacrificing the desire to stream at high speeds and densities, is a common need of half-inch tape drive applications—a need met for VMEbus users by Ciprico's Tapemaster 3000 intelligent Pertec compatible tape controller.

Tape Interface. Controls up to eight formatted start/stop or streaming, GCR, PE, or NRZI half-inch tape drives conforming to the industry standard Pertec interface. Tape drive connections are available from two locations: the VMEbus P2 connector and on-board headers.

Drive Specific Features. Pass through commands with optional parameters and programmable selection of each tape drive's parameters are provided.

Tape Data Rate. Tape data rates of up to 2.0 Mbytes/second.

Tape Records. Any size record can be read or written. Records of an unknown length may also be read.

VMEbus Interface. Compatible with 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. Data transfers may be burst between 4 and 32 bytes under software control.

VMEbus Interrupts. Seven-level dynamic Interrupter support.

VMEbus Performance. With minimum memory response time, data transfers can be burst at 14 Mbytes/second.

Tape Data FIFO. A dual FIFO architecture is used. A 4-Kbyte data FIFO is coupled to the tape interface, while the VMEbus interface uses a 32-byte Short Burst FIFO.

Tape Data Management. Streaming operations of the tape drive are facilitated by ring buffer and scatter/gather operations. Ring buffer commands allow transfers between the system and tape to occur with a minimal amount of software overhead on either the system's or controller's part. Multiple ring buffers are linked together via ring buffer headers located in system memory. Each ring buffer is set up and transferred independently, allowing multiple buffers to be managed at system, not tape, speeds. Scatter/gather further enhances the system's ability to maintain streaming operations by enabling the transfer of contiguous tape records into discontiguous memory locations without special system software.

Interprocessor Compatibility. Hardware support for byte order swapping of tape data is standard.

Software Interface. System memory resident parameter blocks are used to pass commands to the Tapemaster 3000. Parameter blocks may be linked to enhance command execution performance.

Software Support. Drivers for the System V and BSD 4.2 versions of the UNIX® operating system are available.

Error Handling. Under software control, soft errors may be retried for either reads or writes, while hard errors during writes may be written further down the tape.

Diagnostic Capabilities. An automatic power up diagnostic is provided. In addition, extensive diagnostic tests are available through software control.

Visual Indicators. Ready and Error indicators are visible through the faceplate.

Physical. Single slot, double height Eurocard form factor board, 233 x 160 mm.

Electrical. Five volt operation at six amps maximum

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

How the Ciprico "system" supports your own

At Ciprico, our long experience in controller board design and manufacturing is your assurance of full support—both during integration and evaluation and beyond. This support includes:

- ☐ **Streamlined manufacturing procedures**
- ☐ **Thorough testing and inspection,** including comprehensive ESD control, 100% testing on in-circuit test equipment, burn-in testing, and preshipment functional testing in stressed environments
- ☐ **On-site evaluation assistance**
- ☐ **Immediate evaluation board shipment** from factory stock
- ☐ **4-hour response** from qualified support engineering staff during the evaluation period
- ☐ **48-hour board repair,** including functional testing

For more information on the Tapemaster 3000 contact:

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