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Disk, tape and printer solutions for today's computer applications

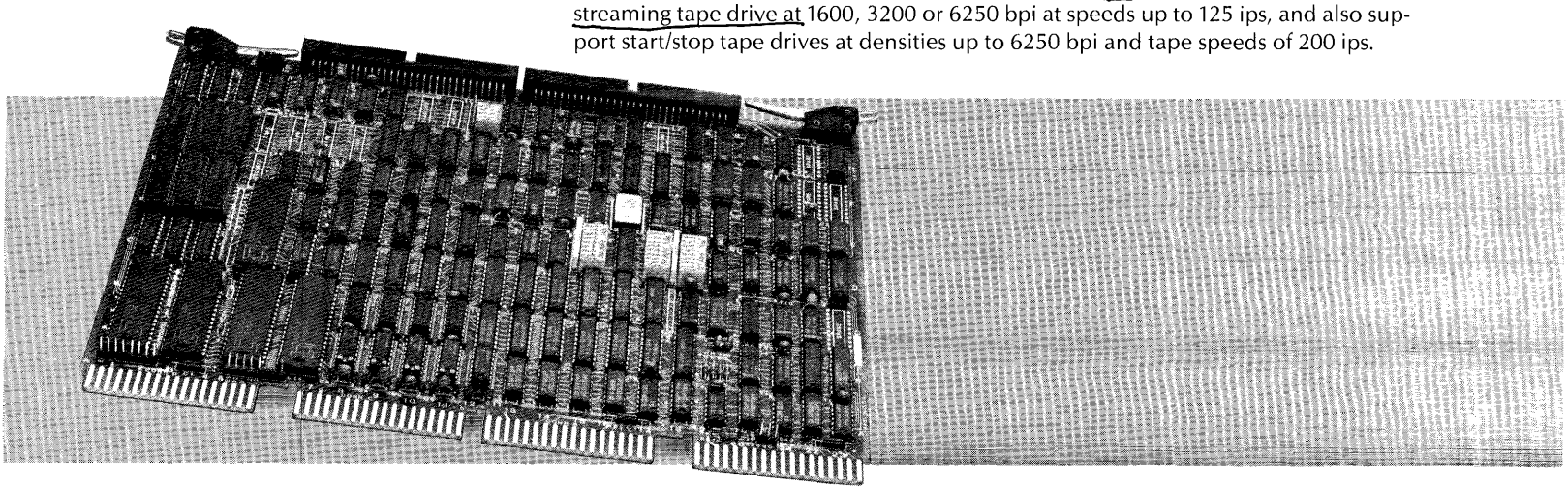
TAPE DIMENSION Q-BUS—CACHECOUPLER™

DEC™ COMPATIBLE ½" TAPE COUPLER

TDQ-III—Pertec Interface
TDQ-IV—STC or Telex Interface

PRODUCT DESCRIPTION

The Western Peripherals Tape Dimension Q-Bus III and IV (TDQ-III & TDQ-IV) CacheCouplers are part of Western Peripheral's family of cache buffer couplers emulating the DEC TS11 and TSV05 tape subsystem. The TDQ-III and TDQ-IV contain a 64k byte cache buffer which can store multiple records to ensure that streaming tape devices operate at maximum efficiency on DEC's Q-Bus family of computer systems. The TDQ-III and TDQ-IV provide the interface for an industry compatible formatted streaming tape drive at 1600, 3200 or 6250 bpi at speeds up to 125 ips, and also support start/stop tape drives at densities up to 6250 bpi and tape speeds of 200 ips.



HARDWARE DESCRIPTION

The coupler is a single standard quad wide printed circuit board, containing a microprocessor plus all the interface and control electronics to emulate the DEC TS11 and TSV05 tape subsystems. The TDQ-III and TDQ-IV install directly into any available Q-Bus card slot in the computer or expansion chassis. Cables are available for the STC, Telex, or Pertec standard interfaces.

COMPUTER COMPATIBILITY

The TDQ-III and TDQ-IV are hardware compatible with the DEC LSI-11, Micro PDP-11, and Micro VAX families of Q-Bus computer systems.

EMULATION

Emulating the DEC TS11 and TSV05 tape subsystems, the TDQ-III and TDQ-IV use the standard TS11 and TSV05 registers and vector to simplify the system interface.

BUS LOADING

The coupler presents a one-unit load to the Q-Bus at all times.

HARDWARE CONFIGURATION

Single standard quad wide printed circuit board.

MOUNTING: Installs directly into a standard LSI-11 or Micro VAX Q-Bus slot.

CABLING: Two 50-conductor 3M-type ribbon cables (Industry Standard Pertec) or two 60-conductor 3M-type ribbon cables (STC/Telex). Telex drives require a special cable adapter board.

CACHE BUFFER FEATURE

The coupler's 64k byte cache buffer provides total immunity to "DATA LATE" conditions on heavily populated buses while maintaining the tape at streaming speeds.

SELF-TEST

Upon power up, the coupler utilizes the power of the microprocessor to exercise the hardware and insure reliable operation. LED's identify any functional segment in question. This self-test feature is standard and transparent to the operating system.

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TECHNICAL SPECIFICATIONS

DRIVE INTERFACE
TDQ-III Industry standard Pertec interface.
TDQ-IV STC or Telex Standard interfaces.

DEVICE ADDRESS
Each coupler and drive subsystem has its own address to maintain TS11 and TSV05 compatibility as defined by DEC.
Up to four (4) subsystems per computer system.

1st Coupler	(MS0)	772520, 772522
2nd Coupler	(MS1)	772524, 772526
3rd Coupler	(MS2)	772530, 772532
4th Coupler	(MS3)	772534, 772536

(Alternate address sets: switch selectable)

INTERRUPT VECTOR
1st Subsystem = 224; others floating.
Alternate vector sets: switch selectable.

PRIORITY LEVEL
Normal Level 5; others available by jumper selection.

TRANSFER RATE:
1.5M byte/sec start/stop mode.
750k byte/sec streaming mode.

NUMBER OF DRIVES
One drive per coupler, couplers may be stacked in system for additional subsystems.

POWER REQUIREMENTS
+5 volts DC (5% tolerance) @ 6.0 amps.

SOFTWARE COMPATIBILITY
The coupler is transparent to the standard operating system tape drivers and compatible with operating systems supporting TS11 and TSV05 such as RSTS/E, RSX-11M, RSX-11M+, XXDP+ and RT-11.

MEDIA COMPATIBILITY
The coupler is designed to emulate DEC format and is compatible with pre-existing library or archival storage ½" 9-track 800/1600/6250 formats per ANSI specs plus 3200 bpi format.

6250 bpi per ANSI × 3.54-1976
1600 bpi per ANSI × 3.59-1973
800 bpi per ANSI × 3.22-1972

OPERATIONAL COMMAND SET (TS-11)

GET STATUS	Get Status
READ	Read next (forward) Read previous (reverse) Reread previous (space reverse, read forward) Reread next (space forward, read reverse)
WRITE CHARACTERISTICS	Load message buffer address and set device characteristics
WRITE	Write data Write data retry (space reverse, erase, write data)
POSITION	Space records forward Space records reverse Skip tape marks forward Skip tape marks reverse Rewind
FORMAT	Write tape mark Erase Write tape mark retry (space reverse, erase, write tape mark)
CONTROL	Message buffer release Rewind and unload Clean tape Rewind with Immediate Interrupt*
INITIALIZE	Drive initialize

STATUS SET
Upon executing a "Get Status" command, the controller returns a comprehensive status summary TSSR that when used with the five extended status registers defines in great detail any malfunction or problems encountered.

*Extended feature function only available with TSV05 emulation

RELIABILITY
Western Peripherals designed the TDQ-III and TDQ-IV with reliability in mind. You benefit from Western Peripherals' experience in fielding over 41,000 controller systems presently sustaining MTBF rates in excess of 50,000 hours. An advanced Quality Assurance program is in effect, providing a superior level of quality unmatched in the industry.

REGIONAL AND INTERNATIONAL SALES OFFICES

UNITED STATES

14511 New Myford Road
Tustin, California 92680
(714) 730-6250
Cable: WESPER
TELEX: 472 0629

Western Peripherals
#7 Sheila Drive
Hauppauge, NY 11788
(516) 724-2561

INTERNATIONAL

Wesper International (U.K.)
126A Haslemere Road
Liphook, Hampshire GU30 7BU
United Kingdom
0428 736822

Wesper International GmbH
Pixisstrasse 2
8000 Munich 80
West Germany
Telephone: 089 982420

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