TRI/ADD PROGRAM
SHIPPABLE PRODUCTS CATALOG

DIGITAL EQUIPMENT CORPORATION

January 1993
Revision 21.0

TA008

TRI/ADD Catalog Information

This document lists hardware products provided by third party vendors that you can add on to Digital platforms as options. Using these add-on products and the applications in this catalog, total worksystem solutions for many market applications are now possible. Contact a vendor directly for more information about a product or to purchase it.

Digital's TRI/ADD Program has ceased operations effective 12/15/92, except for Digital Japan. Version 21.0 is the last update of this catalog. Support will continue for two interconnects, TURBOchannel and Futurebus+. For assistance with product development, the following are available.

TURBOchannel

Copies of Specifications	*Gim Hom*	*1.508.493.7044* *(FAX) 1.508.493.3692*
Development support	*Bill Samaras*	*1.508.493.7322* *(FAX) 1.508.493.5131*
Internet:		*turbochannel@wrksys.enet.dec.com*

Futurebus+

General questions	*Jim Duval*	*1.508.493.6105*
Architecture	*Sam Duncan*	*1.508.493.6794*
Protocol	*Barbara Aichinger*	*1.508.493.2661*
Marketing	*Steve Justus*	*1.508.493.6293*
Mechanical	*Cliff Lupien*	*1.508.493.2764*
FAX number:		*1.508.493.0941*

ACCESS.bus

ACCESS.bus Industry Group	*1.408.991.3517* *(FAX) 1.408.991.3773*

For Japanese products:

TRI/ADD Japan	*Masato Maeda*	*81.3.3989.7313* *(FAX) 81.3.3989.7537*

For Customers with access to Internet:

ftp address:	16.1.0.2
login:	anonymous
password:	anonymous
copy:	TAcatalog.ps

Regarding vendors' information in this catalog:

The product information in this catalog was supplied by the vendors, and Digital has made minor changes to it to suit the catalog's format. The information herein can change without notice and Digital is not responsible for its accuracy.

Customers may want to obtain references, documentation, and/or demonstrations before purchasing these products, because mention of non-Digital products and/or services is for informational purposes only and constitutes neither an endorsement nor a recommendation. Digital assumes no responsibility with regard to the selection, performance, or use of the products. All understandings, agreements, or warranties, if any, take place directly between the vendors and the prospective users.

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Regarding FS-numbers for the products:

FS-numbers (Digital Field Service) assigned to products in this catalog indicate that Digital's U.S. Services has **AT MINIMUM STARTED PLANNING SERVICE SUPPORT FOR THOSE PRODUCTS IN THE U.S.A.** For customer service status in countries other than the U.S., contact your local Digital Service representative.

Legend			
A V	Alpha AXP/OpenVMS	M U	MIPS/ULTRIX
VAX V	VAX/OpenVMS	A O	Alpha AXP/OSF/1
M O	MIPS/OSF/1	A NT	Alpha AXP/NT

Unless otherwise noted, a product is MIPS/ULTRIX based.

Order no.: TA008

WHAT IS NEW THIS MONTH

The following is a list of new products and companies that were added to the catalog this month. The catalog includes Digital Customer Service (FS) numbers for products vendors have qualified with Digital Services. A Digital Sales Representative or Digital Authorized Reseller can provide you quote for a Digital service contract for TRI/ADD vendor products. Use the Field Service numbers in this catalog for this purpose.

58 New Products

ABLE Communications	Communications/Printer Servers (4) Wide Area Gateway Work Area Concentrator
Bit3 Computer Corporation	TURBOchannel-to-Q22bus Adapter*
CSP, Inc.	TURBOchannel Vector Processor**
CMD Technology, Inc.	TURBOchannel Disk/Tape/Optical Adapter*
Centreline Computers Ltd.	Tape Storage Devices (4)
Clearpoint Research Corp.	Disks, Tapes Subsystems (18)
Design Analysis Associates, Inc.	TURBOchannel Realtime Clock Board** (shipping) TURBOchannel MIL-Std-1553 Interface* TURBOchannel-to-T1 Interface* TURBOchannel-to-CEPT Interface**
Diverse Logistics, Inc.	DAT Library Subsystems (2) SCSI Fast/Wide-to-SCSI Fast TURBOchannel 16-bit SCSI Fast/Wide*
EnerAnalytics	Video In/Out Accelerated Graphics**
Evergreen Systems	Military/Industrial Trackball
Extron Electronics	Computer Video Interface Analog and Synchronous Switcher
Gradient Technology, Inc.	A-to-D, D-to-A Converter
Hi-Par Systems	High-performance Tape Subsystem
IRTV GmbH	VME Single Board Computer
Metheus Corporation	VME Graphics Controllers
MAGMA	4DMA Communications Board** (shipping)
Myriad Logic, Inc.	Futurebus+ HIPPI Interface*** Futurebus+ Memory Board*** Futurebus+ Transputer Carrier*** Futurebus+ Transputer Interface *** Futurebus+ Sony Tape Interface*** VME HIPPI Interface
Videomedia, Inc.	Video Controller
VMIC	Intelligent I/O Controller** Realtime I/O Controller
Xtensory, Inc.	Virtual Reality Software Tools 3D Tracking Device Sound Filtering Board

WHAT WAS NEW LAST MONTH

The following is a list of new products and companies that were added to the catalog last month.

PCS GmbH	CAR*AS - Cam Server Software
Calcomp U.S.A.	Spaceball - Input Device

* TURBOchannel Coming Attractions section
** A TURBOchannel product
*** Futurebus+ Coming Attractions section

For vendors' telephone numbers and addresses, and sales locations, see Section 17.

Products by Company

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Table of Contents by Section

1 Networking and Data Communications

♦ ACP 3100
(HDLC Communication Controller)

HDLC LAPB (X.25 Level 2) synchronous HDLC LAPB Communication Controller. Provides high speed reliable links for data transmission over land or satellite lines. Allows a DECstation to communicate with a wide variety of remote systems that support HDLC LAPB. Typical applications are in process control and manufacturing automation; real-time data acquisition, CAD graphics image file transfer and satellite communications.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: ACC Systems

FS no.: FS-ACY02-AD

♦ ACP 3250
(X.25 Synchronous Adapter)

X.25 synchronous communications front-end processor for DECstations that supports the SCSI standard. Allows direct access to X.25 networks from the TCP/IP suite that interface for both incoming an outgoing calls. Additionally, a programmer's interface supports access to X.25 at the packet level for OSI or custom host-based protocols and applications.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: ACC Systems

FS no.: FS-ACY02-AB

♦ ACP 3300
(Token Ring Adapter)

Token Ring host adapter for DEC workstations. Allows a DECstation to connect directly to Token Ring. Can be used in conjunction with a DECstation to serve as a LAN gateway between Ethernet and Token Ring LAN. Operates under the ULTRIX TCP/IP networking kernel. 4 or 16 Mbit Token Ring support. Supports source routing, for operation with source routing bridges. A DECstation can be used as local node on a TCP/IP Token Ring or as a gateway to TCP/IP Ethernet.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: ACC Systems

FS no.: FS-ACY02-AC

♦ X-Direct IOC 3270-D SCSI COAX Gateway
(DEC to IBM COAX Gateway)

This device provides a COAX connection between DECstation (ULTRIX) systems and IBM 370 hosts. The interconnect is via the IBM cluster controller: 3174, 3274, or equivalent. IBM 3278/3279 cut mode color terminal emulation is provided, and IND$FILE bidirection file transfers are supported. Keyboard remapping, keyboard Macros, API, and other features are included.

Special requirements: None

Interconnect: SCSI

Company: I/O Concepts, Inc.

FS no.: FS-IOC01-AA

♦ IOC 3270-DM SCSI-COAX Gateway
(DEC to IBM COAX Gateway)

The X-Direct IOC3270-DM SCSI-to-COAX Gateway provides a COAX connection between DECstation (ULTRIX) systems or ASCII Terminals and IBM 370 hosts. The interconnect is via the IBM cluster controller: 3174, 3274, or equivalent. IBM 3278/3279 SNA-DFT color terminal is provided, and IND$FILE bidirection file transfers are supported. Keyboard remapping, keyboard Macros, API, and other features are included.

Special requirements: None

Interconnect: SCSI

Company: I/O Concepts, Inc.

♦ DEC THICKwire Controller
(Ethernet Communications Controller)

The option card controller is implemented with a Local Area Network Controller for Ethernet chip that performs DMA to its 32-KByte x 32-bit buffer (128 Kbytes) on the option card. The processor uses I/O transactions on the TURBOchannel to transfer the data from the buffer to system memory. The estimated peak transfer rate from the buffer to memory is 1.25 Mbytes/sec.

Special requirements: None

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order no.: PMAD-AB

♦ DEC FDDI Controller 700
(FDDI Communications Adapter)

This board directly connects DECstations to FDDI networks providing standards-based 100 Mbits/sec network communications with complete IEEE 802.3/ Ethernet interoperability. Features a dual-ring-of-trees topology. Supports up to 500 network devices, a maximum ring circumference of 100 KM and a maximum distance between devices of 2 KM for flexible network connections and configurations. Uses secure multimode fiber optic cable (such as 62.125 micron) for its transition medium.

Special requirements: None

Company: Digital Equipment Corporation

Order no.: DEFZA-AA (Optical)
DEFZA-CA (ThickWire STP)

♦ DEC WANcontroller 720 (DSYT1)
(Synchronous Communications Controller)

This high-speed, synchronous communication processor provides two synchronous ports at speeds up to 64 Kbytes/sec, or one port at 1.544 Mbytes/sec. (T1 clear channel communications requires an external CSU/DSU as an interface to the comm line.) The DSYT1 supports HDLC/LAPB and SDLC protocols at these speeds. Synchronous operations of the device are supported by the ULTRIX Wide-Area Network Device Printer (WANDD). Two synchronous ports provide workstations/servers with internal connections to DECnet/OSI, X.25, and SNA networks using Digital's layered network software. In a multivendor environment, TCP/IP users may interface directly to the ULTRIX WAN Device Driver or access X.25 wide-area networks with the X.25 Native Mode Software, and use electronic mail, access remote applications, or transfer image files between Digital's TURBOchannel RISC based DECstations and DECsystem servers, and other vendors systems having TCP/IP over X.25

Special requirements: ULTRIX WAN device driver license is required for synchronous operations; QL-YMJA8-AA (license) and QA-YMJAA-H5 (media and documentation)

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order nos.: DSTY1-AB

♦ Morning Star SnapLink X.25
(X.25 Network Interface)

This product allows a DECstation to connect to public and private X.25 networks. It has three serial ports and connects to the SCSI port on a system. A single port can support T1 and CEPT line speeds. The software is 1980, 1984, and 1988 CCITT compliant and supports four interfaces. There is a socket interface to the X.25 packet level; a X.29 interface that supports incoming calls from remote PADS; a PAD interface that supports outgoing calls via cu, tip, and uucp; and, an IP tunnel driver interface that allows the routing of IP packets over the X.25 software. The product is certified on Tymnet and has a DDN X.25 Standard qualification.

Special requirements: Hardware required.

Interconnect: SCSI

Company: Morning Star Technologies, Inc.

♦ MAGMA 16
(16 Port Serial Multiplexor)

The Magma 16 provides expansion to 16 fully intelligent high speed asynchronous serial ports with full modem control for the DEC TURBOchannel systems. Each port can be connected to a computer terminal, printer, or modem. Contact the vendor for availability.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: MAGMA

FS no.: FS-MGA02-AA

♦ Morning Star SnapLink PPP
(TCP/IP Synchronous Network Interface)

This product is a fully supported implementation of the Internet Standard Point-to-Point Protocol that allows DECstations to communicate from one site to another using TCP/IP. The software can be configured as a client or server so that a remote workstation can connect to a TCP/IP local area network, or two TCP/IP LANs can be connected over dial-up or dedicated telephone lines. The software supports synchronous PPP and includes IP address negotiation, link-level error detection, packet header compression, on-demand dialing, etc. The software has a flexible daemon implementation and is easy and flexible to configure. It has three serial synchronous ports and connects to the SCSI port on the DECstation, supporting up to T1 and CEPT line speeds on one port.

Special requirements: Hardware required.

Interconnect: SCSI

Company: Morning Star Technologies, Inc.

♦ Morning Star PPP
(TCP/IP Asynchronous Network Interface)

This product is a fully supported implementation of the standard Point-to-Point Protocol that allows DECstations to communicate from one site to another using TCP/IP. The software can be configured as a client or server so that a remote workstation can connect to a TCP/IP Local Area Network (LAN), or two TCP/IP LANs can connect over dial-up or dedicated telephone lines. The software supports asynchronous PPP and includes IP address negotiation, link-level error detection, packet header compression, on-demand dialing, packet filtering, etc. The software has a flexible daemon implementation and is easy and flexible to configure. The software uses the native serial port on the DECstation, supporting line speeds up to 38.4 K bps when using a high-speed modem.

Special requirements: None

Interconnect: RS-232, RS-449 Serial Port

Company: Morning Star Technologies, Inc.

♦ Uninet SLAT
(8 Serial, 1 Parallel Ports)

This device provides up to 8 additional RS-232 serial ports and 1 Centronics parallel port to desktop workstations without using any slots in the system. The SLAT uses the SCSI bus to attach to the workstation. The serial ports provide speeds of up to 110K baud, include full modem control, and can be accessed by any application.

Special requirements: Auxiliary software required

Interconnect: SCSI

Company: Uninet Peripherals

♦ Uninet SLAT Model 2
(16 Serial, 2 Parallel Ports)

This device provides up to 16 asynchronous serial and/or 2 Centronics parallel ports without using any slots in the system. The SLAT uses the SCSI bus to attach to the workstation. The serial ports provide speeds up to 150K baud and can output over 100,000 characters per second (all 16 ports at 57K baud), with full modem signals support. Both xon/xoff and true RTS/CTS flow control is provided. The parallel ports can output over 250,000 bytes per second. No new drivers are required and all ports can be accessed by system and application software transparently.

Internet: SCSI

Special requirements: Auxiliary software required

Company: Uninet Peripherals

♦ OLIVIA
(High-speed Communications and Data Acquisition)

Optically linked intelligent VMEbus I/O architecture. Optocoupled, high-performance technical I/O devices like digital, analog, etc. channels. The overall sustained throughput is 10MBytes/sec for each direction and the guaranteed interrupt latency time is less than 300 sec. The amount more than 1000 I/O channels is possible, where the channels are optocoupled over a long distance of up to more than 2000 meters.

Special requirements: Auxiliary hardware/software required.

Interconnect: VMEbus

Company: IRTV GmbH

♦ TeCTRA 4
(4 Mbit/sec Token Ring Adapter)

The Magma TeCTRA 4 is a 4 Mbit/sec Token Ring Adapter for the TURBOchannel. It is designed to allow DECstations to take advantage of existing Token Ring networks and operate with IBM computers, workstations, and IBM compatible Personal Computers. The DECstation becomes a peer on the Token Ring and can support all TCP/IP services.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: MAGMA

FS no.: FS-MGA03-AA

♦ TC-400 TURBOchannel 8-Line Serial Interface
(8-Line Serial Interface)

The TC-400 is an 8-line serial interface module that plugs into one slot of a TURBOchannel equipped workstation. The module provides communication with a wide variety of video terminals and other devices. The TC-400 has a 36-pin connector that interfaces with Digital's H3104-B “harmonica.” The Harmonica is a small distribution box having eight asynchronous channel DEC-423 MMJ connectors. The RS-423-A interface is compatible with Standard RS-232-C. (The 4-wire DEC-423 does not provide for modem control.) The following features are available: a) Single TURBOchannel slot, b) Eight full-duplex asynchronous channels, c) Standard EIA RS-423-A interface, d) Compatible with EIA Standard RS-232-C, e) Includes electrostatic discharge protection and EMI/RFI filters, f) ID ROM with TURBOchannel identification and self-test code, g) On-module interrupt scanner to manage and resolve interrupts from all channels, h) In-band flow control (Xon, Xoff generation and detection), i) Line break detection and generation, j) Automatic self-test at power on.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

FS no.: FS-DAA02-AE

♦ STIFAX
(Network/FAX Gateway)

STIFAX is a software product that provides the ability to send and receive FAX messages electronically. Messages to be sent can consist of ASCII, PostScript or DDIF data. Several FAX modems and computer interfaced FAX devices are supported.

Special requirements: Device driver supplied. Auxiliary hardware required.

Interconnect: RS-232

Company: Stream Technologies, Inc.

♦ MAGMA P1
(Parallel Port)

TURBOchannel™ M/U A/O A/V

The Magma Parallel port is a Centronics compatible high-speed port capable of operating at speeds up to 250,000 characters per second. The board has an on-board RISC processor with a 128-character FIFO, that dramatically reduces CPU overhead. The Parallel Port uses a single TURBOchannel slot and has a standard DB-25 parallel port.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: MAGMA

FS no.: FS-MGA01-AA

♦ MAGMA 8+2
(8 Serial Port & 2 Parallel Port Multiplexor)

TURBOchannel™ M/U A/O A/V

The Magma 8+2 is a single-width TURBOchannel board that features eight asynchronous serial ports and two Centronics parallel ports. Each serial port operates at speeds up to 38,400 bits/sec. Each parallel port operates at speeds up to 250,000 characters per second. All ports are controlled by on-board RISC processors with transmit and receive FIFOs, which dramatically reduce CPU overhead. A breakout box with ten DB-25 connectors is included.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: MAGMA

FS no.: FS-MGA02-AB

♦ TC-700 TURBOchannel Dual Ported Memory
(Communications Controller)

TURBOchannel™ M/U VAX/V A/V M/O A/O

This single-slot, double-height module provides shared memory communications between the processor in the workstation and the user equipment. Features include a 12.5-25 MHz clock, 1Mbyte of random access shared memory, eight general-purpose TTL-level control lines to and from the user equipment, and one interrupt line to the workstation from the user equipment.

Special requirements: Software support available

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

FS no.: FS-DAA02-AG

♦ ACP 3010/3020
(Synchronous/Asynchronous Multiplexor)

The ACP 3020 system consists of either X.25, HDLC, ASYNCH, or DDCMP firmware needed to connect to 8 network lines. The ACP 3010 is a 4-line version of the ACP 3020. These systems allow DEC workstations to act as high-performance network servers in support of custom application or protocols such as NFS and PATHWORKS.

Special requirements: None

Interconnect: SCSI

Company: ACC Systems

♦ TRI/ACC
(4/16 Mbit/sec Token Ring Adapter)

TURBOchannel™ M/U A/O A/V

A single-slot board connecting DECstations directly to a 4/16 Mbit/sec Token Ring network. ULTRIX network drivers are in “setld” format. The driver is integrated with Digital’s ULTRIX/SNA for workstations to appear as LU6.2 supported hosts in a full functioning SNA network. All TCP/IP applications, including PATHWORKS and NFS services, are supported. Functions as an embedded gateway for applications requiring Internet routing. For VAX/VMS applications a QIO/ALTSTART device driver is provided.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: ACC Systems

♦ TC-410 2-Line Serial Interface
(Async Communications Board)

This single-slot board provides asynchronous communications via a 2-channel serial RS-232/RS-423 interface. It provides communications with a wide variety of video terminals and other devices. A low-cost alternative to LAN (Local Area Network), with a terminal server for small systems, this option has a 9-pin D-shell connector for each port. Each port is independently programmable up to 38.4 Kbaud.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

♦ TeCTRA 4/16
(16 Mbit/sec Token Ring Adapter)

The Magma TeCTRA 4/16 is a 4 or 16 Mbit/sec Token Ring Adapter for the TURBOchannel. It is designed to allow DECstations to take advantage of existing Token Ring networks and operate with IBM computers, workstations, and IBM compatible Personal Computers. The DECstation becomes a peer on the Token Ring and can support all TCP/IP services.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: MAGMA

FS no.: FS-MGA03-AA

♦ DELTA
(Dual Ethernet TURBOchannel Adapter)

Dual thick Ethernet LAN TURBOchannel adapter for DECstations that support the TURBOchannel bus architecture. The DELTA functions identically to the DEC PMDA, but with two Thickwire Ethernet ports per TURBOchannel. To network software applications such as TCP/IP and DECNET, the DELTA appears as two PMAD devices. Contact vendor for availability on Alpha AXP and VMS platforms.

Interconnect: TURBOchannel

Company: ACC Systems

FS no.: FS-ACY01-AA

♦ TCA-100
(TURBOchannel ATM Computer Interface)

This interface brings Asynchronous Transfer Mode (ATM) connectivity to Digital's DECstation 5000. It enables DECstation 5000 workstations to be connected to Fore Systems' ATM LAN switches over dedicated fiber-optic lines at 100 Mbits/sec, or 140 Mbits/sec.

The TCA-100 is a single-width TURBOchannel card that provides hardware support for ATM protocols including checksum calculation and ATM cell framing. It comes with ULTRIX operating system software that allows standard network protocols, including TCP/IP, to use Fore Systems' ATM LAN.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: Fore Systems, Inc.

FS no.: FS-FSI01-AA

♦ TC-420 TURBOchannel 8-Line Interface Option
(Serial Communications)

This module plugs into one slot of a TURBOchannel equipped workstation and provides communication to a wide variety of video terminals and other devices. The TC-420 uses a distribution cable with eight 25-pin, D-shell connectors. Each connector provides full modem control. Features include: a) single TURBOchannel slot, b) 8 full-duplex asynchronous channels, c) standard EIA RS-232 interface, d) electrostatic discharge protection and EMI/RFI filters, e) ID ROM with TURBOchannel identification and self-test code, f) on-module interrupt scanner to manage and resolve interrupts from all channels, g) in-band flow control (Xon, Xoff generation and detection), h) line break detection and generation, i) automatic self-test at power on.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

♦ TC-900
(Telecommunications Interface)

This TURBOchannel-to-CEPT telecommunications interface is compatible with the European CCITT recommendation G.703 & G.704, 2.048 Mbit/sec PCM standard. The single-slot module includes a line interface unit, CRC-4 Encode/Decoder, CEPT PCM transceiver, buffer memory, and a DMA interface to the TURBOchannel interconnect. The module demultiplexes the 32-channel inbound data before DMA to the TURBOchannel system.

Special requirements: Auxiliary software required

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

♦ Model HIPPI-830
(VME HIPPI Interface Board)

This HIPPI channel interface, on a single 6U board, is compatible with both 32- and 64-bit VMEbus backplanes. The HIPPI standard (ANSI X3T9.3) defines a point-to-point, 100-MByte/sec dual-simplex channel used for interconnecting workstations, supercomputers, high-speed peripherals, etc. A 33-MHz 68030 processor manages the HIPPI channels and initiates transfers based on a memory-based command structure. User interface is controlled by routines that run on the Myriad board under a VxWorks realtime kernel, which provide a very simple, host-independent software environment. Very high-speed sustained data transfers can be achieved. HIPPI switches and fiber converters provide additional versatility.

Special requirements: Auxiliary software required

Interconnect: VMEbus

Company: Myriad Logic, Inc.

♦ MAGMA 4DMA
(Serial Communications Controller)

High speed TURBOchannel board with four asynchronous serial ports and full modem control. 256Kbps maximum speed. All ports are controlled by an on-board RISC processor which transfers data to/from host memory via DMA, reducing CPU overhead.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: MAGMA

♦ SCSIserver SC12
(Communications/Printer Server)

This device provides 11 async connections and a parallel device via the SCSI bus to provide expanded terminal and printer connections. SCSIserver supports connectivity to DECstations and VAXstations running OpenVMS. Appears as standard terminal connections to the application software. Supports both Centronix and Data Products parallel interfaces and speeds up to 115 Kbaud.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: ABLE Communications

♦ SCSIserver SC04
(Communications/Printer Server)

This device provides three async connections and a parallel device via the SCSI bus to provide expanded terminal and printer connections. SCSIserver supports connectivity to DECstations and VAXstations running OpenVMS. Appears as standard terminal connections to the application software. Supports both Centronix and Data Products parallel interfaces and speeds up to 115 Kbaud.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: ABLE Communications

♦ SCSIserver SC20
(Communications/Printer Server)

This device provides 19 async connections and a parallel port via the SCSI bus to provide expanded terminal and printer connections. SCSIserver supports connectivity to DECstations and VAXstations running OpenVMS. Appears as standard terminal connections to the application software. Supports both Centronix and Data Products parallel interfaces. Speeds up to 115 Kbaud are supported.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: ABLE Communications

♦ SCSI Master
(Communications/Printer Server)

This device attaches two local serial ports, a parallel port, and up to 128 distributed serial devices via the SCSI bus using ABLE MuxMaster distributed concentrators. SCSIserver supports connectivity to DECstations and VAXstations running the OpenVMS. Appear as standard terminal connections to the application software. Supports speeds up to 115 Kbaud.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: ABLE Communications

♦ RemoteGate
(Wide Area Gateway)

This wide area network provides connections to a VAX workstation via SCSI. By connecting RemoteGate to an ABLE SCSI Master on the SCSI bus, gateway connections are made to ARQ-compatible Stat-Mux's or CASE (Cray) or Paradyne WAN's.

Special requirements: Auxiliary hardware supplied

Interconnect: SCSI

Company: ABLE Communications

♦ MuxMaster DS08
(Work Area Concentrator)

This device provides eight distributed serial ports for connection through a SCSI Master to a VAX workstation. Connects up to 16 DS08's to a single SCSI Master on the SCSI bus providing 128 distributed ports. Any unit can be moved or replaced without rebooting the workstation.

Special requirements: Auxiliary hardware supplied

Interconnect: SCSI

Company: ABLE Communications

♦ VMEAX400
(Single-board Computer)

MU VAXV AV

The rtVAX400-based (chip set) VMEbus, VAX single-board computer is used as a communications controller to VAX, MIPS, and Alpha AXP based systems. Otherwise, it is used for data acquisition in combination with other VMEbus I/O-modules.

Special requirements: Auxiliary Software required (VAXELN)

Interconnect: VMEbus

Company: IRTV GmbH

♦ MAGMA 2+1
(Serial/Parallel Printer Controller)

Two asynchronous, high-speed serial ports and one 250,000 character/sec Centronics parallel port on a single-width TURBOchannel option. 115K bps maximum speed each serial port. Parallel port speed up to 250 characters per second. All ports controlled by on-board RISC processors to reduce CPU overhead. Full modem control.

Special requirements: None

Interconnect: TURBOchannel

Company: MAGMA

Product Description	Protocols	Connectivity	Special Requirements	Model No./FS No.	Company
♦ **TRANSCEIVERS**					
Thick COAX tap, five LEDs, HB On/Off switch	IEEE 802.3	DB-15, Ethernet AUI port	None	AT-206	Allied Telesis, Inc.
10BaseT Micro transceiver, four LEDs, HB switch	N/A	DB-15, Ethernet AUI port	None	AT-210T	
Two ports, XCVR with dual circuits, interchangeable taps	IEEE 802.3	DB-15, Ethernet AUI port	None	AT-250	
Dual-port 10BaseT transceiver with LEDs and polarity correction	N/A	DB-15, Ethernet AUI port	None	AT-270T	
Two and four ports, fan-out units	IEEE 802.3	DB-15	None	AT-280/480	
Four ports, 10BaseT, HB On/Off switch, LEDs	IEEE 802.3/ Ethernet V 1,2	DB-15, Ethernet AUI port	None	AT-440T	
Eight ports, diagnostic LEDs	IEEE 802.3/ Ethernet V.1,2	DB-15, Ethernet AUI port	None	AT-810	
Eight Port Fanout Transceiver	IEEE 802.3	AUI	None	AT-810SL	
Micro thin COAX, XCVR with LED and On/Off HB switch	IEEE 802.3	DB-15, Ethernet AUI port	None	AT-MX10	
Micro fiber XCVR FOIRL, five LEDs, HB switch, ST connector	N/A	DB-15	None	AT-MX26F	
Micro-sized direct connect, SQE and LINK selectable, LED display	IEEE 802.3	Ethernet, IEEE 802.3	None	MICRO-TWIST-MIL-10P	MiLAN Technology Corp.
Connects two workstations, SQE selectable, Local/remote selectable, LED display	N/A	Ethernet, IEEE 802.3, 10BaseT-to-AUI	None	MICRO-TWIST II	
Micro-sized, external SQE selectable, LED display	IEEE 802.3	Ethernet, IEEE 802.3	None	MICRO-MAU-MIL-05T	
Delni-style fanout box, local/remote modes, two to eight users, AUI	N/A	Ethernet, IEEE 802.3	None	Diplex-MIL-201X/ QuadPlex-MIL-400X / OctaPlex-MIL-800X	

Product Description	Protocols	Connectivity	Special Requirements	Model No./FS No.	Company
Thick COAX, SQE selectable, LED display 10Base5, AUI Thicknet	IEEE 802.3	Ethernet, IEEE 802.3	None	MAXI-MAU-MIL-01V/ MAXI-MAU-MIL-01N/ MAXI-MAU-MIL-01B	MiLAN Technology Corp.
Micro FIBER/FORIL, ST to AUI, 5 LEDs	N/A	Ethernet, AUI	None	LTX-FL	Lantronix
Thin COAX Transceiver, one 15-pin “D” connector, one BNC T-connector, 2 LEDs	N/A	Ethernet	None	LTX-2	
Thickwire Transceiver, 15-pin “D” connector, five AMP coaxial tap, LEDs	N/A	Ethernet	None	LTX-5	
Twisted-pair Transceiver, 15-pin “D” connector, RJ45 modular connector, auto polarity correction, seven LEDs	N/A	Ethernet	None	LTX-T	
♦ **REPEATERS**					
Four ports, thin COAX, LEDs	IEEE 802.3/ Ethernet V 1,2	DB-15, Ethernet AUI port	None	AT-3004	Allied Telesis, Inc.
Eight ports, thin COAX, fiber optics support, on-line LEDs	IEEE 802.3/ Ethernet V 1,2	DB-15, Ethernet AUI port	None	AT-3008	
Twelve ports, 10BaseT, Hub with AUI network port	IEEE 802.3/ Ethernet V 1,2	RJ-45, DB-15	None	AT-3012T	
Micro repeater, BNC-to-10BaseT; four LEDs per port	N/A	BNC and RJ-45	None	AT-MR112T	
Micro repeater, AUI-to-AUI; four LEDs per port	IEEE 802.3	BNC and AUI	None	AT-MR113	
Micro repeater, AUI-to-BNC; four LEDs per port	IEEE 802.3	BNC and AUI	None	AT-MR114	
Micro repeater, BNC-to-BNC; four LEDs per port	IEEE 802.3	RG-58, BNC	None	AT-MR115	
Micro FOIRL, ST-to-AUI; four LEDs per port	N/A	ST and DB-15	None	AT-MR116F	
Micro FOIRL, ST-to-BNC; four LEDs per port	N/A	ST, BNC	None	AT-MR117F	
AUI to RJ45 Repeater/converter	IEEE 802.3	AUI, RJ45	None	AT-MR121T	
BNC to RJ45 Repeater/converter	IEEE 802.3	BNC, RJ45	None	AT-MR122T	

Product Description	Protocols	Connectivity	Special Requirements	Model No./FS No.	Company
AUI to AUI Repeater/extender	IEEE 802.3	AUI	None	AT-MR123	Allied Telesis, Inc.
AUI to BNC Repeater/converter	IEEE 802.3	AUI, BNC	None	AT-MR124	
BNC to BNC Repeater/converter	IEEE 802.3	BNC	None	AT-MR125	
AUI to FOIRL Repeater/converter	IEEE 802.3	AUI, FOIRL	None	AT-MR126F	
BNC to FOIRL Repeater/converter	IEEE 802.3	BNC, FOIRL	None	AT-MR127F	
Four ports, micro 10BaseT, AUI network ports	N/A	RJ-45, DB-15	None	AT-MR410T2-T	
Eight port micro 10BaseT repeater, AUI network port	N/A	DB-15, Ethernet AUI	None	AT-MR810T/820T	
Four port thin COAX repeater with LEDs	IEEE 802.3/ EthernetV 1,2	DB-15 Ethernet AUI port	None	AT-3004	
Four port 10Base2 - Repeater	IEEE 802.3	BNC, AUI	None	AT-3004SL	
Eight port, thin COAX, fiber optics support, on-line LEDs	IEEE 802.3/ EthernetV 1,2	DB-15 Ethernet AUI port	None	AT-3008	
Eight port 10Base2 - Repeater	IEEE 802.3	BNC, AUI	None	AT-3008SL	
One Port, Thin Coax, Diagnostic LEDs	N/A	Ethernet, AUI	None	LTR1	Lantronix
Four Port, Thin Coax, Diagnostic LEDs	N/A	Ethernet, AUI	None	LTR4	
Eight port, Thin Coax, Diagnostic LEDs	N/A	Ethernet	None	LTR8	
♦ **ETHERNET SWITCHES**					
5 Ethernet ports, 20 Mbps of throughput, 100% packet filter/ forwarding	IEEE 802.3/ Ethernet V. 1.2	5 RJ45 Ports	10BaseT (RJ45)	EPS-500 FS-KLP03-EA	Kalpana, Inc.
15 Ethernet ports, 70 Mbps of throughput, 100% packet filtering/forward	IEEE 802.3/ Ethernet V. 1.2	AUI Ports (DB-15)	(1) Transceiver or Micro-Mau per port	EPS-1500 FS-KLP02-EA	

Product Description	Protocols	Connectivity	Special Requirements	Model No./FS No.	Company
♦ **NETWORKING DEVICES**					
TCP/IP network print server, one serial, one parallel port	TCP/IP & IPX	Ethernet, IEEE 802.3	None	FastPort 3000-MIL-3000	MiLAN Technology Corp.
TCP/IP & IPX Network Print Server with DMA One serial, one parallel	TCP./IP & IPX	Ethernet	None	FastPort - MIL-31 00	
Network adapter (10Base2, 10Base5), 16-bit	TCP/IP	Ethernet, IEEE 802.3	None	MIL-2000C	
Network adapter, (10BaseT, AUI), 16-bit	TCP/IP	Ethernet, IEEE 802.3	None	MIL-2000TP	
TCP/IP & IPX Network Print Server with DMA One scabale, one parallel	TCP./IP	Ethernet	None	FastPort - MIL-3000	
5-line Terminal/Print Server, four serial (MMJ) connections, one parallel (Centronics), LAT, TCP/IP support	LAT-TCP/IP	Ethernet, AUI	None	EPS4-D/DF	Lantronix
5-line Terminal/Print Server, four serial (RJ12) connections, one parallel (Centronics), LAN, TCP/IP	LAT-TCP/IP	Ethernet, AUI	None	EPS4-R/RF	
Terminal/Print Server, 8 serial lines (RJ12) to LAN; LAT, TCP/IP protocols supported	LAT-TCP/IP	Ethernet, AUI	None	ETS8-R/RFB	
Terminal/Print Server, 8 serial lines (MMJ) to LAN; LAT, TCP/IP protocols supported	LAT-TCP/IP	Ethernet, AUI	None	ETS8-D/DF	
Terminal/Print Server, 12 serial (RJ12) connections, one parallel (Centronics), support LAT, TCP/IP	LAT-TCP/IP	Ethernet, AUI	None	EPS12D/DF	
Terminal/Print Server, 12 serial (RJ12) connections, one parallel (Centronics) LAT, TCP/IP protocols supported	LAT-TCP/IP	Ethernet, AUI	None	EPS12R/RF	
Terminal/Print Server, 16 serial (RJ12) connections, support LAT, TCP/IP	LAT-TCP/IP	Ethernet, AUI	None	ETS16-R/RF	
Terminal/Print Server, 16 serial (MMJ) connections, LAT TCP/IP protocols supported	LAT-TCP/IP	Ethernet, AUI	None	ETS16-D/DF	
Print Server, 1 Parallel port, 1 Serial port 6 LEDs, additional software not required	LAT, TCP/IP, AppleTalk, IPX	Ethernet, AUI Twisted Pair	External 12VDC Power Supply	EPS1	
Bus Master Network Adapter	IEEE 802.3	10BaseT	None	AT-1500T	Allied Telesis, Inc.

Product Description	Protocols	Connectivity	Special Requirements	Model No./FS No.	Company
Bus Master Network Adapter	IEEE 802.3	10BaseT, 10Base2	None	AT-1500BT	Allied Telesis, Inc.
Bus Master Network Adapter	IEEE 802.3	10BaseT, FOIRL	None	AT-1500FT	
Local Memory Network Adapter	IEEE 802.3	10BaseT	None	AT-1700T	
Local Memory Network Adapter	IEEE 802.3	10BaseT, 10Base2	None	AT-1700BT	
Local Memory Network Adapter	IEEE 802.3	10BaseT, FOIRL	None	AT-1700FT	
♦ **ETHERNET EXTENDERS**					
Twisted Pair Segment Extender, link selectable, LED display	IEEE 802.3	Ethernet, IEEE 802.3	None	MORE TWIST-MIL-100E	MiLAN Technology Corp.
♦ **ETHERNET CONVERTERS**					
10Base2-to-10BaseT converter for thin COAX, LED display	IEEE 802.3	Ethernet, IEEE 802.3	None	Thin-Twist-MIL-120A	MiLAN Technology Corp.
10BaseT-to-AUI Media Converter for Thicknet, LED display	IEEE 802.3	Ethernet, IEEE 802.3	None	Any-Twist-MIL-130A	
AUI Multinetwork Media Converter with MAUs (fiber-to-10BaseT, thick-to-10BaseT, etc.)	N/A	Ethernet, IEEE 802.3	External 12 VDC power supply	Duplinet-MIL-100C	
UTP-to-10Base2 Converter for UTP to BNC, power, transmit, jabber, polarity, and link LEDs	N/A	Ethernet	None	LTX-C2	Lantronix
♦ **ETHERNET HUBS**					
10BaseT Hub, four port, expandable to eight, BNC Thin COAX connects to 10Base2, thinnet	N/A	Ethernet, IEEE 802.3	None	Hub-Card-MIL-4081	MiLAN Technology Corp.
10BaseT Hub, four port, expandable to eight, BNC thin COAX connector connects to 10Base2 thinnet	N/A	Ethernet, IEEE 802.3	External 12 VDC power supply	Micro-Hub-MIL-4083	

Product Description	Protocols	Connectivity	Special Requirements	Model No./FS No.	Company
Twisted Pair Repeater/Hub, eight UTP port, one AUI Ethernet interface, LEDs, manual partitioning, polarity correction	N/A	Ethernet	None	LTR8T	Lantronix
Twisted Pair Repeater/Hub, 16 UTP port, 2 AUI port, LEDs, manual partitioning, polarity correction	N/A	Ethernet	None	LTR16T	
9 port 10BaseT Hub, 8 UTP front panel, switch selectable thick thin UTP on rear	N/A	Ethernet	None	Micro HubLE-MIL-4000H	MiLAN Technology Corp.
♦ **ETHERNET BRIDGES**					
Local Ethernet Bridge, filters at 25K pps, forwards at 12.5k, spanning tree, SNMP	N/A	DB-15 or BNC	None	AT-6870/75	Allied Telesis, Inc.

2 Data Acquisition and Realtime

♦ Serial488/4
(IEEE488 Converter)

The Serial 488/4 serial-to-IEEE converter allows four serial (RS-232) ports to be programmed from one IEEE controller, providing multiplexing for systems that have both IEEE and serial devices to integrate. Serial 488/4 connects to the IEEE488 bus and can be controlled from a Digital workstation with the SCSI488 IEEE controller.

Special requirements: Auxiliary hardware required

Interconnect: SCSI and IEEE488

Company: IOtech, Inc.ADC488

♦ ADC488
(A-to-D Converter)

The ADC488 series of analog-to-digital converters have up to 16 analog inputs with a 16-bit A/D and a maximum sampling rate of 100KHz. The ADC488/8S has eight channels that can be simultaneously sampled. Each ADC488 also has eight digital input and eight digital output lines. The ADC488 connects to the IEEE488 bus and can be controlled from a Digital workstation that is equipped with a SCS1488 IEEE controller.

Special requirements: Auxiliary hardware required

Interconnect: SCSI and IEEE488

Company: IOtech, Inc.

♦ DAC488
(D-to-A Converter)

The DAC488 digital-to-analog converter has two or four channels of 12-bit-plus sign analog output that can be used to program power supplies or stimulate devices under test. Each DAC488 also features eight digital inputs and eight digital outputs. The DAC488 connects to the IEEE 488 bus and can be controlled from a Digital workstation that is equipped with the SCS1488IEEE controller.

Special requirements: Auxiliary hardware required

Interconnect: SCSI and IEEE488

Company: IOtech, Inc.

♦ Digital488
(IEEE488 Converter)

The Digital 488 digital I/O converter to IEEE provides 40 or 80 bits of TTL compatible digital input and output, fully programmable in 8-bit ports. With Digital 488, a Digital workstation can control relays, solenoids, sensors, and other devices. Digital 488 connects via the SCS1488 IEEE converter.

Special requirements: Auxiliary hardware required

Interconnect: SCSI and IEEE488

Company: IOtech, Inc.

♦ Digital488HS/32
(High-Speed Digital I/O Interface)

This device enables a Digital workstation to transfer digital data to and from an external device at up to 1 MBytes/sec. For example, a discrete A/D converter's output can be transmitted at high speeds whenever new data is available. Conversely, the device can drive a digital-analog converter at high speeds. Digital 488HS/32 connects to a Digital workstation that is equipped with a SCSI488 or IEZ-11 IEEE controller.

Special requirements: Auxiliary hardware required

Interconnect: SCSI and IEEE 488

Company: IOtech, Inc.

♦ VMEAX 400
(Single-board Computer)

"SEE NETWORKING AND DATA COMMUNICATIONS SECTION"

♦ DAC488/HR
(Digital-to-Analog Converter)

This device has two or four channels of 16-bit, 100 kHz analog outputs that can function as a precision voltage source, function generator, or arbitrary waveform generator. Memory buffering up to 1 MBytes per channel is optionally available. When configured with the IOtech ADC488/16, it forms a powerful 16-bit stimulus/response test system. DAC488/HR connects to the IEEE 488 bus and can be controlled from a Digital workstation via a SCSI488 or IEZ-11 IEEE controller.

Special requirements: Auxiliary hardware required

Interconnect: IEEE 488

Company: IOtech, Inc.

♦ Filter488
(Signal Filter for Digitizer)

This device provides low-pass, anti-aliasing signal filters for any digitizer. The corner frequency is programmable up to 50 kHz in steps as small as .0002 Hz. The unit can accommodate 4 or 8 channels of Bessel, Butterworth, Chebychev, or elliptic 8-pole filter option, which suits it for use in both frequency and time domain applications. Filter 488 makes an excellent front-end for IOtech's ADC488 series of digitizers. It connects to a Digital workstation that is equipped with a SCSI488 or IEZ-11 IEEE controller.

Special requirements: Auxiliary hardware required

Interconnect: SCSI, IEEE 488, and RS-232

Company: IOtech, Inc.

♦ Mux488
(Analog Signal Multiplexer)

The Mux488 series of multiplexers provide high channel density for analog signals and industry-standard signal conditioning, allowing a Digital workstation to control up to 1,024 channels of analog inputs. The Mux488/64 features 64 channels that can be programmed for 11 switching configurations. The Mux488/16SC accommodates the 5B series signal conditioning modules for reading thermocouples, strain gauges, or RTDs. Their flexibility makes Mux488 products useful for a wide range of applications. The units connect to a Digital workstation via a SCSI488 or IEZ-11 IEEE controller, or an RS-232 port.

Special requirements: Auxiliary hardware required

Interconnect: SCSI, IEEE 488, and RS-232

Company: IOtech, Inc.

♦ Desklab
(Realtime Analog)

DeskLab is a complete hardware/software solution for workstation real-time analog data acquisition. DeskLab installs exactly like a SCSI disk without special drivers. Application field include speech processing, acoustics, psychoacoustics, engineering and similar areas. For telecom applications there is a completely software-supported phone interface option. Parallel and serial ports are included for integrating with existing equipment. Comprehensive software tools include a Command-Line interface which allows applications to be built in the ULTRIX shell, and a complete C-function library. Additionally, a graphic Control Panel & Signal Editor, GVIS, supports testing, debugging and data analysis. GVIS runs under DECwindows and other window managers.

Special requirements: None

Interconnect: SCSI

Company: Gradient Technology, Inc.

♦ DASM-AD14 (tm)
(A-to-D Converter)

The DASM-AD14 is a 14-bit, 2 MHz sampling analog-to-digital (A/D) converter subsystem that attaches to the workstation's SCSI port. The DASM-AD14 digitizes +/-5v analog signals and buffers the data in up to 8 Mbytes of internal memory that appears to the host as a SCSI disk drive. Features include: internal or external sample clock, clock scaler, external enable, asynchronous triggering, TTL I/O port, status signals, and digital threshold and slope comparator for signal dependent triggering. Signal to noise ratio is 73dB. 8-input multiplexer is optional.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: Analogic Corporation/CDA Division

♦ GPIB-DEC5000
(IEEE-488 Interface)

Low-cost, high-performance IEEE-488 interface kit for DECstation 5000 Series workstations. A workstation equipped with a TC-GPIB interface board is a high-performance IEEE488 Controller that can be used for numerous applications in laboratory testing, products testing, and process monitoring and control. Can monitor, control, and communicate with over 4,000 different engineering, scientific, and medical instruments. Can handle such demanding instrument control applications as those involving digitizers acquiring large amounts of data at very high speeds. Has read/write transfer rate of over 1 Mbytes/sec. TURBOchannel Direct Memory Access (DMA) data transfers with onboard DMA controller. With enhanced IEEE488.2 capabilities, you can take full advantage of the IEEE488.2 and the new Standard Commands for Programmable Instrumentation (SCPI) standards.

Special requirements: Device Drive supplied

Interconnect: TURBOchannel

Company: National Instruments Corporation

FS no.: FS-NC104-AA

♦ DASBOX SERIES
(High-Speed Multi-Channel AD/DA Converter)

This device efficiently controls I/O of analog signals to/from a computer. It acquires and analyzes physical data of sound, vibration, distortion, etc. It is also used in a wide range of on-line systems for medical and bionics markets. Sampling and output on all channels is simultaneous. 12-, 12-, 16-bit high resolution AD/DA. Maximum sampling speed is 1 MHz (12-bit), 300 KHz (16-bit). Maximum 16MW FIFO buffer memory. Product series is based on a consistent architecture.

Special requirements: None

Interconnect: SCSI, 16-bit parallel, IEEE488 (GPIB)

Company: Systems Design Service Corporation

♦ MIO - BOARD
(Multi I/O Board, RS-232, RS-485, Arcnet)

This programmable multi-I/O board provides serial data links to Profibus (Feldbus), 3964R (Siemens), Modbus (Modicon), and Arcnet. The MIO interface consists of a MIO-TC base-module and up to four application modules, which are plugged into the base-module. Each application module is equipped with a 80C31 Microcontroller (except Arcnet). Software drivers for Profibus, 3964R, Modbus, and Arcnet are available. For individual needs, customers can use a programmable data link port and a comfortable C interface.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: M+R Industrial Automation

♦ Model 73A SCSI CAMAC Crate Controller
(CAMAC Data Acquisition and Control)

Controls a crate of up to 23 CAMAC (IEEE Std. 583) data acquisition and control modules. Provides a range of functions from simple digital I/O registers to high-speed, analog transient recorders operating at hundreds of megasamples/sec. A single bus can support up to seven crates or other SCSI devices. Permits transfer rates up to 3 mbytes/sec, the maximum permitted by CAMAC specifications.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: Jorway Corporation

♦ Intelligent I/O Controller
(I/O Controller)

This series of boards provide the user with a turnkey I/O subsystem. It integrates an I/O subsystem at minimum cost because of the extensive host software utilities and commercial off-the-shelf products. The user has an I/O solution that offers a wide variety of flexible and expandable configurations that interface to a variety of computers.

Special requirements: Auxiliary hardware/software required

Interconnect: TURBOchannel to/from VMEbus

Company: VMIC

♦ DeskLab
(A-to-D, D-to-A Converter System)

DeskLab is a 2-channel, 16-bit, 48 KHz A-to-D, D-to-A system for realtime data acquisition that emulates a SCSI disk and uses no special drivers. Applications include speech processing, acoustics, psychoacoustics, engineering, and similar market areas. For telecom applications it has an optional phone interface. Parallel and serial ports available. Bundled software includes a C-function library and a command-line interface, which allows applications to be built in the ULTRIX shell. A Graphic Signal Editor (GVIS) supports data analysis, testing, and debugging, and runs under DECwindows and other window managers.

Special requirements: None

Interconnect: SCSI

Company: Gradient Technology, Inc.

♦ Universal I/O Controller
(Realtime I/O Controller)

This networked-based I/O controller is based on industry-standard realtime operating systems designed to support a variety of target processors. Current products include support for the VAX on VME. The UIOC includes VMIC firmware and optional host software that provides an effective turnkey I/O subsystem when coupled with a variety of VMIC I/O boards, chassis, backplanes, bus repeaters, power supplies, barrier terminal strips, and other system building blocks.

Special requirements: Auxiliary hardware/software required

Interconnect: Ethernet

Company: VMIC

♦ TC-600 Real-Time-Clock Option
(Real-Time Clock)

This module plugs into one slot of a TURBOchannel based workstation. The module has a precision crystal oscillator, prescaler, and a 32-bit timer. An interrupt generator can interrupt the workstation when various events occur. Two external inputs and an external output provide the timing or counting of external of events.

Typical uses include measuring the interrupt latency of an operating system, measuring the time required to perform a System Call, and measuring the duration of external events. The TC-600 can also be used to count external events, generate high-resolution (100ns) delays and provide realtime interrupts.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

3 Software

♦ EasyCopy/Motif
(Imaging Manipulation Software)

EasyCopy/X provides a powerful tool for capture and production of high-quality, color hardcopy of screen images that are created either by X-Window applications or directly from image files stored on disk. Motif based menu or command line interface provide added flexibility. Color calibration and gamma correction improve output to a wide variety of high-resolution monochrome and color printers, including PostScript Level II devices with JPEG.

Special requirements: None

Interconnect: None

Company: Autograph International Inc.

♦ Makedisc
(CD-ROM Publishing Software)

“Makedisc” formats data and creates a CD-ROM disc image in preparation for production at a CD mastering facility. The image can be functionally tested in-house before mastering. “Makedisc” is completely compliant with the ISO 9660 and X/Open’s XCDR international standards. In addition, it conforms to the proposed Rock Ridge standard which is becoming a de facto standard for the Unix workstation market. Rock Ridge supports POSIX file names and other file system semantics. Adherence to these standards ensures that CD-ROMs formatted are readable by any computer with an ISO 9660 driver.

Special requirements: None

Interconnect: None

Company: Young Minds Inc.

♦ XMedia Tools Runtime Kit
(Software for DECMedia)

A part of XMedia Tools V1.0, this kit includes drivers, servers, sample applications, software motion pictures, and a few audio and video clips. It can assist software developers both in building distributed multimedia applications or in adding audio and video components to existing applications or documentation. (A license for the XMedia Tools Runtime Kit is included with the DECaudio and DECvideo/PIP TURBOchannel options)

Special requirements: ULTRIX/UWS V4.2-A and Motif 1.1 software

Company: Digital Equipment Corporation

Order nos.: QB-LBDAA-01 XMedia Tools Runtime licenses for subscribers to the ULTRIX layered product software consolidated distribution.

QB-MB5AA-AA for non-subscribers. Includes licenses and software on a TK-50 tape CD-ROM

QB-LBDAA-01 XMedia Tools Runtime Software

♦ XMedia Tools Developer Kit
(Software for DECmedia)

A part of XMedia Tools V1.0, this kit adds on-line documentation audio and video libraries, a more extensive audio clip art library, and tools enhancing the functionality found in the XMedia Tools Runtime Kit. Contains software licenses and a CD-ROM of audio clip art.

Special requirements: ULTRIX/UWS V4.2-A, Motif 1.1, and Bookreader 2.0

Company: Digital Equipment Corporation

Order nos.: QB-XUVAA-AA for subscribers to ULTRIX software consolidated distribution CD-ROM

QB-XUWAA-AA full kit for non-subscribers, contains software licenses

♦ IOC 3270-D SCSI-Coax Gateway
(DEC TO IBM COAX Gateway)

The X-Direct IOC TN3270 software provides 3278/3279 DEC Windows based Terminal Emulation for DECstation (Ultrix) and can use any Ethernet to mainframe connection that support TN3270 protocol such as the IBM 3172 controller. The Terminal emulation includes default colors, EAB support, IND$FILE bidirectional file transfer, Keyboard remapping, Keyboard Macros, API and other features are included.

Special requirements: None

Interconnect: Ethernet

Company: I/O Concepts, Inc.

♦ Lantronix Media Kit
(Server Software)

Kit contains download software for the entire family of servers (4-, 8-, and 16-line) and RTEL software source code, as well as one year of update service via modem (Kermit) or via anonymous FTP (Internet). Media kits are available on TK50 VMS, TK50 tar (ULTRIX), 9-track magtape VMS, 9-track magtape tar (ULTRIX) DC600 1/4-inch tar, HP (Hewlett Packard), 5-1/4-inch DOS floppy, tar, HP (Hewlett Packard), 5-1/4-inch DOS floppy, and 3-1/2-inch DOS floppy.

Special requirements: None

Interconnect: Ethernet

Company: Lantronix

♦ MONA - SNMP Network Management
(Software)

MONA (Manager of Network Activity) is a graphics oriented network management package that runs on any DEC ULTRIX system and provides the control and monitoring tools needed to effectively manage complex network of interconnected LANs/WANs. MONA can manage any device that implements SNMP (Simple Network Management Protocol). With its large installed base and proven field performance, SNMP is the industry standard for multi-vendor network management.

Special requirements: None

Company: ACC Systems

♦ CAR*AS
(Server Software)

High-quality NFS server software for WORM optical media and jukeboxes. The data stored on the optical media is presented network-wide as a NFS file system and can be accessed from all NFS-capable clients in the network. Special security features allow full data recovery after system crashes. Add-on packages provide for duplication of WORM media (CAR*DUPLIKAT) and for generating unique file and path names (CAR*STRAT).

Special requirements: ULTRIX 4.2a and up, SCSI CAM driver

Interconnect: SCSI

Company: PCS GmbH

♦ XVS (Xtensory Virtual Systemtoolkit)
(Software Development Tool)

Provides virtual reality capability (walkthrus, etc.) that interface with most common data file formats, such as Autodesk DXF, PDB, IGES, Movie BYU, and render voxel based graphics. Provides drivers for virtual reality devices, such as Logitech's Red Baron, Polhemus, Ascension, StereoGraphics, and VPL's Dataglove. Runs on Digital's ULTRIX systems, with Motif and PHIGS/GL/Dore.

Special requirements: Device driver supplied

Interconnect: N/A

Company: Xtensory Inc.

4 Interactive Media

♦ CGC Color Graphics Converter II
(Video Output)

The CGCII Color Graphics Converter is a rack-mountable video scan converter that is factory-configurable to virtually any workstation. It converts high-resolution black and white or color video from a workstation to standard television formats (NTSC or PAL) in real time. Designed for multiple system users, one CGCII can take the place of up to eight scan converters. Switch-selectable, the CGCII can handle a variety of computer graphics systems with a variety of needs.

Special requirements: None

Interconnect: RGB signals

Company: Folsom Research, Inc.

♦ DASM-FGM
(Video Frame Grabber)

This device is a SCSI frame grabber that acquires and displays video images. The DASM-FGM connects directly to the SCSI port and captures monochrome images from RS-170/NTSC or CCIR/PAL video signals. Images are stored in up to 8 Mbytes of internal memory that appears as SCSI disk memory. Includes a 24-bit color-lookup table; RGB, NTSC or PAL outputs; digital TTL I/O port and asynchronous frame triggering. Up to 30 512 x 480 image frames can be stored internally.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: Analogic Corporation
CDA Division

♦ Color-FRAME
(Frame Grabber)

A DECwindows or Motif-based, live video viewer and frame grabber application running on VAXstations and DECstations. Color-FRAME allows the viewing and capturing with (on-screen grab button) of live video in a window in conjunction with an easily available frame grabber connected to the SCSI bus. The display can alternate between live and captured video. Images can display on an 8-bit color workstation, be stored as 8 or 24-bit color files, or be converted into Digital's DDIF format for compatibility with other CDA compliant applications, such as mail or the DECwrite Compound Document Editor. Files are compatible with standard Postscript printers. Compatible with PCS Systems' FRAME product which supports gray scale images.

Special requirements: Auxiliary hardware required

Interconnect: SCSI

Company: PCS Systems, Inc.

♦ CGC
(Color Graphics Converter)

The Color Graphics Converter converts high-resolution black and white or color video from a DEC workstation using standard television formats (NTSC or PAL) in realtime. Permits the use of standard video recorders, projectors, and video disks. The CGC is ideal for CAD/CAM/CAE, animation, military, marketing and commercial television applications.

Special requirements: None

Interconnect: RGB signals

Company: Folsom Research, Inc.

♦ Video Booster 5000
(Video Display Amplifier)

The VB5000 is a 200 MHz video amplifier that allows the user to move the keyboard, monitor and mouse up to 50 meters away from the system. The videobooster can be used with workstations of display resolution up to 1290 X 1048. Special adapters included for 8 plane graphics, PSX, GPX, and video signals amplification. Depending on the workstation video connector requirements, the VB5000 is connected using four cables (red, green, blue, and keyboard/mouse). Cables are sold in 10, 20, 35 and 50 meter lengths.

Special requirements: None

Interconnect: Video RGB signals

Company: BGS

♦ **Video/Scan**
(Video Scan Converter and Frame Grabber)

The Video/Scan is a video scan converter and frame grabber for the DECstation 5000 family of workstations. It converts high-resolution video from the DECstation to standard television formats (RS-170A RGB, NTSC, S-Video, or CCIR RGB, PAL, S-Video), in real time. Converted graphics can be edited, recorded, and projected using a wide variety of standard video equipment. The frame grab feature allows animators to capture a video image from a camera or videodisk and use it to create texture maps for use with computer-generated images.

Special requirements: Device driver supplied

Interconnect: SCSI & RGB signals

Company: Folsom Research, Inc.

♦ **RGB/View 1050**
(Realtime Video Display)

This standalone windowing system displays live television or other real-time video on the workstation. NTSC (or PAL) video, RGB RS-170, S-VHS, FLIR, infrared or radar signals can be input. The video is shown full screen or in a window.

Special requirements: Device driver supplied

Interconnect: RGB and SCSI

Company: RGB Spectrum

♦ **RGB/Videolink 1450AX**
(Video Output)

This standalone video scan converter transforms computer graphics to NTSC (or PAL) standard video for video transmission. It features autosync, flicker filter, 24-bit color, and keyer for overlays.

Special requirements: None

Interconnect: RGB signals

Company: RGB Spectrum

♦ **RGB/Videolink 1600U**
(Video Output)

This device transforms high-resolution computer graphics to television format for videotaping and projection. It features autosync, flicker filter, zoom and a double scan rate output for high quality projection.

Special requirements: None

Interconnect: RGB Analog

Company: RGB Spectrum

♦ **MediaWall**
(Large Screen High-Resolution Display)

This device transforms a wall of monitors into a giant computer screen. It integrates computer animation, graphics, text, and full motion and still video using industry standard software to create dynamic multimedia presentations. High-resolution graphics and digitized images are split across all or any part of the wall. MediaWall provides high-impact, large screen information displays even in bright light, making it the ideal solution for tradeshows, retail stores, convention centers, museums, passenger terminals, and other environments with high ambient lighting.

Special requirements: None

Interconnect: Ethernet, RGB

Company: RGB Spectrum

♦ **Watchdog**
(Monochrome Multiple Video Display)

Watchdog accepts NTSC (RS-170) or PAL (CCIR) video signals. It can also be configured to accept infrared, radar, medical imaging, and other non-broadcast standard video formats. Video sources can be asynchronous; no genlock is required. The system displays up to 15 monochrome video windows, which are independently positioned, scaled, and overlapped. A window can be positioned anywhere on the screen, smoothly scaled from 1/64 to full screen and overlapped with other windows. Each window can be labelled with up to 64 alphanumeric characters for time, date, and source information.

Special requirements: None

Interconnect: Video RGB signals, RS-232

Company: RGB Spectrum

♦ Video/Scan
(Video I/O Peripheral)

This device is a flexible video I/O peripheral that supports three functions: realtime video output (scan conversion) from the computer screen, single-frame down loading for animation, and single-frame grabbing (video-in) into a workstation. A SCSI device, the Video/Scan allows digital frame transfer to-and-from the built-in 24-bit, frame buffer. In addition, the popular V-LAN tape controller system is built in (optional V-LAN receiver required). Outputs include NTSC or PAL, RGB, and SVHS. Features include frame freeze, flicker filter, and V-LAN control.

Special requirements: Device driver supplied
SCSI-CAM

Interconnect: SCSI, RGB signals

Company: Folsom Research, Inc.

♦ KING
(Scan Converter)

KING enables a realtime conversion of analog RGB signals coming from any workstation into standard television signals (PAL, Y/C, COMPONMENT). KING allows realtime videorecording of any current process on a graphic workstation. KING can be simultaneously connected up to 30 workstations, even of different types. As KING is entirely microprocessor-controlled, no hardware modifications are required should the user change connections.

Special requirements: None

Interconnect: RGB signals

Company: GRAFITE S.R.L.

♦ ImageMaker
(Frame Grabber)

ImageMaker is a versatile video image capture and display solution for VMS and RISC/Unix based workstations. Its Features include data compression, powerful image enhancement features with specialized functions for detailed inspection, and analysis of images (TIFF, DDIF, XWD) and PostScript output formats, (NTSC, PAL, RS170, and video camera input sources), and support of DECwrite, FrameMaker, Interleaf, and DESpresent document packages. ImageMaker interfaces to a SCSI frame grabber and also to AVR, UMAX, and Ricoh scanners. For a current list of other scanners supported, please contact the vendor.

Special requirements: Device driver supplied/
Auxiliary hardware required

Interconnect: SCSI

Company: ImageWave Corporation

♦ PACE (Production Animation Control Environment)
(V-LAN Transmitter and Receiver)

A complete frame-by-frame V-LAN animation controller for VTRs and video disks. V-LAN is supported by all major vendors of animation software. Frame accurate (+/-0) for all applicable VTRs. Externally connected by a serial port. 19-inch rackmount

Special requirements: None

Interconnect: Serial port

Company: Videomedia, Inc.

♦ FSC-64000VZ Frame Scan Converter
(Realtime Video Converter)

This device offers frame-recording and animation capabilities by taking RGB graphics signals fed from a variety of computers ranging from personal computers to professional graphics workstations and converting them in realtime into NTSC or PAL standard TV signals. It features zooming, scrolling, flicker smoothing, freeze-frame, test display, and remote control function. Window function presents 640 x 512 pixel portion of full resolution graphics.

Special requirements: None

Interconnect: RGB

Company: Photron Limited

♦ FSC-8000 Frame Scan Converter
(Realtime Video Converter)

This device takes personal computer graphics signals and converts them into NTSC or PAL TV signals for graphics in various presentations and TV broadcast programming. Graphics from MAC, VGA, and EGA are now available on VCR tapes, large-screen monitors, and projectors, and video printers. Conversion is carried out in realtime and in full color. It features scrolling, flicker smoothing, freeze-frame, color bars, and RS-232 control and autolock capabilities.

Special requirements: None

Interconnect: RGB

Company: Photron Limited

♦ DECaudio
(Audio Signal Processing)

A product in the DECmedia set of multimedia enabling products, this single-slot audio/signal processing option uses a Motorola DSP 56001. DECaudio consists of a board that has the telephone line and set interface (US/Canada market) and an external distribution box with

- Speaker, amplification, stereo volume/balance control
- Microphone, headphone and handset jacks; microphone pre-amplification for gain flexibility with a wide range of mics
- Telephone-grade (8-bit, 8 KHz sampling) line in-and-out
- CD-quality (stereo 16-bit, 44.1 KHz sampling) audio-out
- ISDN S interface (certification country specific) DSP port

License for XMedia Tools Runtime Kit included.

Special requirements: First release of the XMedia Tools software exposes only telephone-grade audio. The Personal DECstation platform has similar capabilities built in so this release of XMedia Tools does not apply to that platform. Later releases will include support for the telephony, CD-quality audio, and ISDN capabilities of the DECaudio hardware.

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order nos.: AV01B-AA factory installed
AV01B-DA field installed
AV01B-A9 No power cord (for Europe and GIA)

♦ FSC-32000VZ Frame Scan Converter
(Scan Converter)

This device provides computer graphics for visual presentations and TV broadcast programs by taking RGB graphics signals fed from a variety of computers ranging from personal computers to graphics workstations and converting them in realtime into NTSC or PAL TV signals. It features autolock, zooming, scrolling, flicker smoothing, freeze-frame, test display, and remote control function.

Special requirements: None

Interconnect: RGB

Company: Photron Limited

♦ Video Scan Converters
(Scan Converter)

These devices available separately transform high-resolution computer graphics to the television format required by virtual reality displays. In addition to realtime scan conversion, they also permit video input and output to devices such as cameras, VCRs, and CD-ROMs.

Special requirements: None

Interconnect: SCSI, RGB Signals

Company: Xtensory, Inc.

♦ Alix
(Video Controller)

V-LAN compatible modules for frame accurate control of serial VTRs and video disks. Alix-1 controls one device for a perfect solution to frame accurate animation control. Alix-2 adds a second V-LAN receiver to control a source tape deck as well as a record deck, thus creating a cuts editing system. The animation-orientation user gains the efficiency of performing cuts editing, rotoscoping, and animation on a common set of hardware. Alix modules work with all major animation software. Frame accurate (+/-0) for all applicable VTRs. Externally connected by a serial port.

Special requirements: Auxiliary hardware required

Interconnect: RS232, Serial port

Company: Videomedia, Inc.

♦ DASM-Color
(Video Frame Grabber)

This device is a 24-bit realtime SCSI frame grabber that emulates a SCSI disk drive and easily attaches to DECstation, VAXstation, and Alpha AXP workstations. The DASM-Color is compatible with NTSC or PAL cameras or other video sources and can have up to 16 Mbytes of frame buffer memory. Images can also be downloaded for display. RGB, composite and S-Video inputs and outputs.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: Analogic Corporation

5 Multimedia Peripherals

♦ Crystal Eyes/PC
(Stereo 3D Viewer)

A high-quality, flicker-free stereoscopic 3D viewing system. Lightweight, battery-operated active eyeware. It operates on any DECstation 5000 series running ULTRIX or OSF/1, and Alpha AXP series running OSF/1.

Special requirements: Monitor running 120 Hz refresh rate. A 120 Hz refresh rate monitor from Hitachi, Model CM2187M is available from StereoGraphics.

For systems that are not stereo-ready, hardware stereo-ready image source can be connected via a video synch line to a GDC-3 display controller.

Interconnect: Video synch line

Company: StereoGraphics Corporation

♦ ImageCorder PLUS
(3D Film Recorder)

This film recorder produces photorealistic slides (35mm), prints (4 inches x 5 inches and 8 inches x 10 inches), overheads (4 x 5 and 8 x 10), and movies (16mm and 35mm cine) from graphics workstations. The system accepts both analog and digital data via RGB, centronics or SCSI interfaces. It accurately reproduces full-color (16.7 million), 3D images involving complicated rendering algorithms such as ray-tracing. Output time is a very fast 10 seconds for 35mm slides to 75 seconds for the 8 x 10 format.

Special requirements: None

Interconnect: RGB, Centronics, SCSI

Company: Focus Graphics, Inc.

♦ Crystal River's Convolvotron
(Sound Filtering Board)

3D sound filtering board. Filters sound to provide 3D position for sound source.

Special requirements: Device driver supplied

Interconnect: RS232, Ethernet

Company: Xtensory Inc.

6 Disk and Tape Storage

♦ **GENROCO "TURBOstor" IPI-120T**
(IPI-2 Disk Controller)

A level 2 Intelligent Peripheral Interface (IPI) disk drive controller for TURBOchannel. Supports up to eight daisy-chained drives on a piggyback module consuming one TURBOchannel slot. Handles currently available drives (e.g., Seagate, Fujitsu) with data rates up to 12 Mbytes/sec. ULTRIX software driver included. Device is bootable and supports overlapped DMA seeks, latency and seek ordering, error correcting code, shadowing, striping, and dual porting.

Special requirements: Device driver supplied

Company: GENROCO

FS no.: FS-GRO01-TA

♦ **GENROCO "TURBOstor" IPI-153T**
(IPI-3 Disk Controller)

A level-3 Intelligent Peripheral channel adapter & IPI-2 disk array controller for TURBOchannel. The IPI-153T provides one IPI-3 I/O port on a single TURBOchannel module. Uses fully DEC compatible (bootable) MSCP ULTRIX software driver. Transfer rates maintainable at up to 12.5 MB/sec.

With CDC 99020 Disk Array Controller, supports up to 4 channels of eight IPI-2 drives per channel, and up to 90 GBytes of formatted serial data or 60 GBytes of RAID-3 high availability data. Each 153T can handle up to eight 99020 controllers. Contact vendor for availability.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: GENROCO

FS no.: FS-GRO01-TC

DISK STORAGE

Product Description	Form Factor	Capacity	Connectivity	O/S	Company	Model No./FS No.
RAID Disk Subsystem with Cache Software	Tabletop/ Deskside	4 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS	Clearpoint Research Corporation	FA4000 FS-CLP25-N3
RAID Disk Subsystem with Cache Software	Tabletop/ Deskside	1.7 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		FA1700 FS-CLP25-N2
RAID Disk Subsystem with Cache Software	Tabletop/ Deskside	8 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		FA8000
External Disk Subsystem	3.5”	1 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-26E FS-CLP25-MQ
Internal Disk Subsystem	3.5”	1 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-26N FS-CLP25-MR
External Disk Subsystem	3.5”	425 Mbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-25E
Internal Disk Subsystem	3.5”	425 Mbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-25N FS-CLP35-RB
External Disk Subsystem	5.25”	1.35 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-58E FS-CLP35-RW
Internal Disk Subsystem	5.25”	1.35 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-58N FS-CLP35-RN
External Disk Subsystem	5.25”	2.0 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-60E FS-CLP25-NL
Internal Disk Subsystem	5.25”	2.0 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-60N FS-CLP25-MM
External Disk Subsystem	5.25”	3.6 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-61E
Internal Disk Subsystem	5.25”	3.6 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-61N
MO Disk Drive, Random Access, Bootable Media	5-1/4-inch	590 Mbytes	SCSI	MIPS/ULTRIX VAX/VMS	General Systems & Software Ltd.	GSS3100 MO Disk FS-TTY122-KG

DISK STORAGE (continued)

Product Description	Form Factor	Capacity	Connectivity	O/S	Company	Model No./FS No.
Write-once, erasable, optical disk subsystem	N/A	N/A	SCSI	MIPS/ULTRIX	KOM Incorporated	OptiFile II
Write-once, erasable, optical jukebox subsystem	N/A	N/A	SCSI	MIPS/ULTRIX		OptiServer II
MO-erasable optical, SCSI-2 controller	5-1/4-inch	650 Mbytes-1 Gbyte	SCSI	N/A	MAXOPTIX Corporation	TAHITI FA-MXT15-RB
Single drive removable disk chassis	5-1/4-inch	760Mbytes-2.5 Gbytes	SCSI	N/A	MountainGate Data Systems, Inc.	DataShuttle 1000
Dual-drive removable shock-isolated disk subsystem	5-1/4-inch	760 Mbytes-2.5 Gbytes	SCSI	N/A		DataShuttle 2000
Shock-isolated, removable single disk drive	3-1/2-inch	100 Mbytes-1.0 Gbytes	SCSI	N/A		DataShuttle 500
WORM Optical, data buffering, compression, caching	12-inch	6.55 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS	Ten X Technology, Inc.	Opti-Win 6400 FS-TXY02-KC
WORM Optical, data buffering, compression, caching	5-1/4-inch	650 Mbytes	SCSI	MIPS/ULTRIX VAX/VMS		Opti-Win 650 FS-TXY02-KA
WORM Optical, data buffering, compression, caching	5-1/4-inch	940 Mbytes	SCSI	MIPS/ULTRIX VAX/VMS		Opti-Win 940 FS-TXY02-KE
WORM, MO, automatic media type detection	5-1/4-inch	940 Mbytes/ 1 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		OptiXchange 940 FS-TXY02-KF
Multifunction automatic media type detection	5-1/4-inch	650 Mbytes	SCSI	MIPS/ULTRIX VAX/VMS		OptiXchange 650 FS-TXY02-KE
1/2-inch cartridge drive with intelligent status display	1/2-inch cartridge	2.6 Gbytes	SCSI	N/A	Transitional Technology, Inc.	CTS-5210
1/2-inch cartridge drive with intelligent status display	1/2-inch cartridge	6 Gbytes	SCSI	N/A		CTS-5610
1/2-inch cartridge stacker	1/2-inch cartridge	42 Gbytes	SCSI	N/A		CTS-5610/7
8mm 10 cartridge stacker	8mm	50 Gbytes	SCSI	N/A		Series 10i

TAPE STORAGE

Product Description	Form Factor	Capacity	Connectivity	O/S	Company	Model No./FS No.
Functional upgrade for TZ85, illuminated status display bootable media, can read TK50 distribution tapes. Switch selectable compression.		6.5 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS ALPHA/ OpenVMS/ OSF/1	Centreline Computers Limited	CL85
Functional upgrade for TKZ09. Illuminated status display write mode select button, giving full data interchange.	8mm		SCSI	MIPS/ULTRIX VAX/VMS ALPHA/ OpenVMS/ OSF/1		CL8H
Upgrades TKZ09 with a 10 tape autoloader mechanism, illuminated status display. Bootable media, mode select to write with all existing tape drives.	8mm		SCSI	MIPS/ULTRIX VAX/VMS ALPHA/ OpenVMS/ OSF/1		CL8HS
External Tape Backup Subsystem	4mm	8 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS	Clearpoint Research Corporation	CPR-04 FS-CLP35-TD
External Tape Backup Subsystem	8mm	5 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-085 FS-CLP35-TB
External Tape Backup Subsystem with Stacker	8mm	50 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-085 Stacker
External Tape Backup Subsystem with Compression	8mm	15 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		CPR-085-C
External Tape Backup Subsystem Tabletop Enclosure	9-Track Tabletop	1600/6250	SCSI	MIPS/ULTRIX VAX/VMS		CPR-07T FS-CLP35-TF
External Tape Backup Subsystem Rackmount Chassis	9-Track Rackmount	1600/6250	SCSI	MIPS/ULTRIX VAX/VMS		CPR-07R FS-CLP35-TE
Automatic backup system, high capacity	Tabletop	64 Gbytes	SCSI	VMS/ULTRIX RT-11	Diverse Logistics, Inc.	DBS0 BEZEL DATstacker FS-DLG71-KA

TAPE STORAGE (continued)

Product Description	Form Factor	Capacity	Connectivity	O/S	Company	Model No./FS No.
Automatic backup system, high capacity	Tabletop	64 Gbytes	BA 400 Q-Bus	VMS/ULTRIX RT-11	Diverse Logistics, Inc.	DBSO-TT1-SMDC FS-DLG-B2-AG FS-DLG-58-AA
Automatic backup system, high capacity	Tabletop	64 Gbytes	BA 23/123 Q-Bus	VMS/ULTRIX RT-11		DBSO-TT1-SQDC FS-DLG-B2-AG FS-DLG-27-RB
Automatic backup system, high capacity	Tabletop	64 Gbytes	UNIBUS	VMS/ULTRIX RT-11		DBSO-TT1-SUDC FS-DLG-B2-AG FS-DLG-69-TA
DAT library system, sustained data rate 183 DBPS to 1.5 MBPS, random access changer mechanism, DAT drive. Display/control for status, easy reconfiguration. Uses SCSI-2 MCCS.	4mm DAT	32 Gbytes	SCSI	MIPS/ULTRIX ALPHA/OSF/1		LIBRA/16 Series
Tape library subsystem. Data transfer rates from 183KB-700KB per second. Data compression available, sequential mode for unattended backup or random access, uses SCSI-2 MCCS.		64 Gbytes	SCSI	MIPS/ULTRIX ALPHA/OSF/1		LIBRA/8 Series
DAT Helical Scan Tape Drive, Bootable Media	4mm	2- 4 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS	General Systems & Software Ltd.	GSS 3100/4mm
DAT Helical Scan Tape Drive, Bootable Media	4mm	10-20 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		GSS 3100/4mmS
Helical Scan Tape AutO/Stacker, Bootable Media	8mm	65-135 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS		GSS 3100/8mm S
High performance magnetic tape subsystem, sustained transfer 2.0 - 6.0 MBS, compatible with many types of platforms, expandable (4 to 8 tape drives), automatic error detection.	8mm	15-60 Gbytes	SCSI II Fast, Wide		Hi-Par Systems	HOG
Mass-storage subsystem, auto-load, unattended backup, data acquisition and archival	8 mm	125-270 Gbytes	SCSI	N/A	IGM Data Autoloader Division.	8 mm-ATL

TAPE STORAGE (continued)

Product Description	Form Factor	Capacity	Connectivity	O/S	Company	Model No./FS No.
Helical Scan tape backup subsystem for Digital workstations and servers. This unit is identical to the Digital model TKZ08-AA	5-1/4-inch Full height in external enclosure	2.2 Gbytes	SCSI	MIPS/ULTRIX VAX/VMS	Mountain Network Solutions, Inc.	FileSafe 2100 D (TKZ08-AA) FS-MTN07-TA
Helical Scan subsystem, unattended backup	8mm	2.5 Gbytes	SCSI	N/A	Transitional Technology, Inc.	CTS-8210
Helical Scan, intelligent status display, ECC	8mm	4.6 Gbytes	SCSI	N/A		CTS-8212 FS-TTY11-TF
Helical Scan subsystem, unattached backup	8mm	2.5 Gbytes	SCSI	N/A		CTS-8510 Tape FS-TTY12-KC
Subsystem, intelligent status display, ECC	8mm	10 Gbytes	SCSI	N/A		CTS-8512 FS-TTY11-TE

7 Input Devices

♦ DATATAB Digitizer
(Graphic Digitizer)

This device excels in all benchmarks tests sizes 12” x 12” tablet to a 60” x 120”. Styles include opaque, backlit, and rear-projection models. Absolute accuracy levels include + or -.010”, + or -.005”, and + or -.003”.

Special requirements: None

Interconnect: RS-232C

Company: Altek Corporation

♦ Lite Line Digitizer
(Graphic Digitizer)

This non-backlit device has an active area ranging from 12” x 18” to 36” x 48”. Absolute accuracy levels available are + or -.005” and + or -.010”. Full subsystems interchangeability provides adjustment-free performance without maintenance.

Special requirements: None

Interconnect: RS-232C

Company: Altek Corporation

♦ Quad Sheet Digitizer
(Digitizer)

These devices are table-top, backlit digitizers designed specifically for quad sheets and smaller documents. Active areas range from 12” x 12” to 24” x 36”. Absolute accuracy levels: + or -.003”, +/- .005” and +/- .010”.

Special requirements: None

Interconnect: RS-232C

Company: Altek Corporation

FS no.: FS-ALK

♦ Mouse-Trak
(Trackball Input Device)

Mouse-Trak both commercial and industrial are trackball input devices directly replacing the DEC mouse. Mouse-Trak offers input as a stationary device with speed control and user definable input keys at your fingertips.

Special requirements: None

Interconnect: Mouse port

Company: ITAC Systems, Inc.

♦ Diamond XX-DEC
(2-inch Military/Industrial Trackball)

This device can be used in place of the corporate mouse. It is a rugged, quality, high-resolution, compact input device for professional and industrial application.

Special requirements: None

Interconnect: Mouse port

Company: Evergreen Systems

♦ Omega Connection Premium Trackball
(1-1/2 inch Commercial Grade Trackball)

This device can be used in place of the corporate mouse. It is a quality, lighter duty trackball, no larger than the mouse trackball for office and commercial use.

Special requirements: None

Interconnect: Mouse port

Company: Evergreen Systems

♦ UNIXtouch (Non-X Window Applications)
(Touch Screen)

A complete touch screen solution (touch panel hardware and software). Imbedded calls in the UNIXtouch software library routines allows you to integrate touch screen input into non-X Window or non-mouse programs.

Special requirements: Device driver supplied

Interconnect: RS-232 port

Company: Trident Systems, Inc.

♦ XTouch (X Window Applications)
(Touch Screen)

A complete touch solution (touch panel hardware and software). The Xtouch software converts the touch event into cursor movement or X mouse event. You can run your programs by using either a mouse or touching the screen.

Special requirements: Device driver supplied

Interconnect: RS-232 port

Company: Trident Systems, Inc.

♦ Spatial Tracking Devices
(Trackball)

These devices provide position and orientation information in relation to a source or other specified reference frame, enabling a full six degree-of-freedom (x, y, x, roll, pitch, yaw) for tracking your head, hand or input devices.

Special requirements: None

Interconnect: EIA232

Company: Xtensory, Inc.

♦ Drawing Board II
(Tablets)

High-performance tablets in a wide range of sizes, with up to 2,540 lines/in. (100 lines/mm) resolution and +/-0.010 in. (+/-0.254 mm) accuracy. Combines capabilities of a digitizer, graphics tablet, and mouse. Uniquely designed cursors and pens are in cordless or corded configurations.

Special requirements: Device driver supplies. Auxiliary hardware required.

Interconnect: RS-232C, Centronics, Ethernet

Company: NS CalComp Corporation

♦ Optical Conversion Unit
(SCSI-to-Optical)

OCU is a SCSI hardware interface that allows a writable optical disk to be installed on a variety of operating systems and computers with no need for a software driver. OCU makes the optical drive "look and behave" just like a standard SCSI Winchester disk drive. It supports drives in 5.25- and 12-inch formats. The OCU provides improved drive performance through caching and increased storage capacity through hardware or firmware data compression.

Special requirements: None

Interconnect: SCSI

Company: Ten X Technology, Inc.

FS no.: FS-TXY01-AA

♦ SCSI488/W
(IEEE488 Converter)

This device is a SCSI-to-IEEE488 (GPIB, HP-IB) converter that turns a DECstation 5000 or 3100 into a full-featured IEEE488 controller. SCSI488/W requires DEC RT Integrator software to operate. With this device, a Digital workstation can control any of the thousands of IEEE 488 instruments, printers, plotters, and other peripheral products.

Special requirements: Digital RT Integrator

Interconnect: SCSI and IEEE488

Company: IOtech, Inc.

♦ Spaceball 2003
(Input Device)

This unique image-manipulation device is specifically for 3D workstation users. It's extremely intuitive, interactive method for rotating and moving objects on DEC workstations is designed for automotive, aerospace, mechanical and CAD engineers to view and edit 3D designs from various angles. Has six degrees of freedom and control for smoother, more natural manipulation of on-screen objects about X, Y, and Z axis simultaneously.

Special requirements: Device driver supplied

Interconnect: Serial

Company: Calcomp Digitizer Group

♦ Diamond XL-DEC
(Military/Industrial Trackball)

This 2-inch device can be used in place of the Digital corporate mouse. Performance is identical to the Diamond XX-DEC, except switches are located on the right and left side with a bar switch across the front. The product also features a wrist support.

Special requirements: None

Interconnect: RS-232

Company: Evergreen Systems

♦ Polhemus FASTTRAK
(3D Tracking Device)

Standalone box providing 3D tracking of up to three sources within a 6-foot cube for RISC and VAX systems.

Special requirements: Device driver supplied

Interconnect: RS-232

Company: Xtensory Inc.

8 Adapters and Controllers

♦ GET 10042301 NTDS Parallel Interface for VMEbus
(Parallel Interface)

The GET 10042301 is a full duplex NTDS parallel interface adapter which operates in the MIL-S-1397 SLOW (Type A) or FAST (Type B) environment. 68000 CPU based VME interface features 16 bit data path, 24 bit addressing, programmable interrupt levels and vectors, and a 32K word dual ported static RAM buffer. This DP RAM architecture allows the user to write application software which uses the onboard processor to interface with or emulate many NTDS devices.

Special requirements: Device driver supplied

Interconnect: VME

Company: G.E.T. Engineering Corporation

♦ GET 10042401 NTDS Parallel Interface for VMEbus
(Parallel Interface)

The GET 10042401 is a full duplex NTDS parallel interface adapter which operates in the MIL-S-1397 ANEW (TYPE C) or (TYPE H) environment. The 68000 CPU based VME interface features 16 bit data path, 24 bit addressing, programmable interrupt levels and vectors, and a 32K word dual ported static RAM buffer. This DP RAM architecture allows the user to write application software which uses the onboard processor to interface with or emulate many NTDS devices.

Special requirements: Device driver supplied

Interconnect: VME

Company: G.E.T. Engineering Corporation

♦ GET 10042501 NTDS Serial Interface for VMEbus
(Serial Interface)

The GET 10042501 is a full duplex NTDS serial interface adapter which operates in the MIL-S-1397 (TYPE D) serial environment. The 68000 CPU based VME interface features 16 bit data path, 24 bit addressing, programmable interrupt levels and vectors, and a 32K word dual ported static RAM buffer. This DP RAM architecture allows the user to write application software which uses the onboard processor to interface with or emulate many NTDS devices.

Special requirements: Device driver supplied

Interconnect: VME

Company: G.E.T. Engineering Corporation

♦ GET 10042601 NATO Low-Level Serial Interface for VMEbus
(Serial Interface)

The GET 10042601 is a full duplex serial interface adapter which operates in the NATO Low Level Serial (TYPE E) environment. The 68000 CPU based VME interface features 16 bit addressing, programmable interrupt levels and vectors, and a 32K word dual ported static RAM buffer. This DP RAM architecture allows the user to write application software which uses the onboard processor to interface with or emulate many NTDS devices.

Special requirements: Device driver supplied

Interconnect: VME

Company: G.E.T. Engineering Corporation

♦ GET 10042701 ROLM S-311 Interface for VMEbus
(Serial Interface)

The GET 10042701 is a full duplex serial interface adapter which operates in the ROLM S-311 environment. The 68000 CPU based VME interface features 16 bit data path, 2 bit addressing, programmable interrupt levels and vectors, and a 32K word dual ported static RAM buffer. This DP RAM architecture allows the user to write application software which uses the onboard processor to interface with or emulate many NTDS devices.

Special requirements: Device driver supplied

Interconnect: VME

Company: G.E.T. Engineering Corporation

♦ GET 10042901 STANAG 4156 Interface for VMEbus
(Serial Interface)

The GET 10042901 is a full duplex serial interface adapter which operates in the STANAG 4156 environment. The 68000 CPU based VME interface features 16 bit data path, 24 bit addressing, programmable interrupt levels and vectors, and a 32K word dual ported static RAM buffer. This RAM architecture allows the user to write application software which uses the onboard processor to interface with or emulate many NTDS devices.

Special requirements: Device driver supplied

Interconnect: VME

Company: G.E.T. Engineering Corporation

♦ Model 130 Versatec Parallel Interface
(SCSI Plotter Interface)

The Model 130 is a SCSI to Versatec Parallel Interface (VPI) converter. The Model 130 accepts SCSI "in" from the DEC workstation and provides VIP "out" to the plotting equipment. The Model 130 provides a high performance physical connection between Versatec controllers and plotters and DECstations/DECsystems. Use of the VPI technology allows the Model 130 to provide high speed data transfer at 300-600 Kilobytes per second based on the configuration, reliability with byte-by-byte handshaking, plotter connections up to 1,000 feet from the workstation. Interface software provided give you on-line tools and report for ease of installation and maintenance, fine tuning performance and plot quality to meet site specific requirements, diagnostics and fault isolation, and custom application interface development. Requires 480K of disk space in the user directory. If the Model 130 is the first device connected to a SCSI adapter, a special host to peripheral SCSI cable and a SCSI terminator are needed.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: Versatec

FS no.: 334421 VERSATEC IN SC

♦ DEFZA-AA
(DEC FDDI Communications Adapter)

"SEE NETWORKING SECTION"

♦ TC-100 TURBOchannel Parallel Printer Option
(Printer Interface)

This board plugs into one slot of a TURBOchannel-based workstation providing a parallel interface from TURBOchannel to a wide variety of parallel printers and other devices. It operates at a high speed, and is ideally suited for use with laser printers and plotters. The option supports input of parallel data for data acquisition applications. The TC-100 also features: single TURBOchannel slot, IBM PC compatible parallel printer port, centronix compatible timing, loopback hardware for self-test, and both input and output of 8-bit parallel data.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

FS no.: FS-DAA02-AA

♦ DCT-1000
(DRV11 Interface)

The DCT-1000 provides a high speed point-to-point link for real time applications between a TURBOchannel workstation and user equipment. The DCT-1000 can also be used to link two workstations or a workstation and an existing Unibus or Q-bus based computer system together for high speed data transfer. The DCT-1000 module installs directly into a single-width TURBOchannel option slot of the DECstation enclosure and is signal and pin compatible with Digital's DRV11-WA. The DCT-1000 comes complete with a software driver ready for user applications.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: The Logical Company

FS no.: FS-TLL01-GA

♦ TC-300 TURBOchannel-to-VME Bus Interface Option
(Bus Adapter)

This option provides a direct bus coupling that allows the physical address space of a TURBOchannel-based worksystem to be mapped into that of a remote VMEbus. The entire physical bus address space of the remote VMEbus machine is made accessible to the TURBOchannel workstation. The VMEbus has full access to the first 1 Gbyte of the TURBOchannel workstation's memory space. The Bus Link consists of a single-slot TURBOchannel option module, a fiberoptic interconnect cable, and a 6U Eurocard VME interface module. An optional 5-slot VME card cage is available. The TC-300 has the following features: software transparent bus-to-bus coupling, symmetrical (either bus can master the other bus), both busses run independently and simultaneously, 8/16/32-bit data transfer, up to 2,000 ft. separation.

Special requirements: None

Interconnect: TURBOchannel and VME

Company: Design Analysis Associates, Inc.

FS no.: FS-DAA02-AC/AD

♦ VME I/O Adapter For TURBOchannel

Digital's VME-to-TURBOchannel adapter provides high performance and maximizes the use of the VME bandwidth. Designed to be compliant to IEEE/ANSI 1014.1987 standards, it consists of an expansion box with a set of modules, a TURBOchannel card mounted in the DECstation 5000 system, and a VME controller card mounted in the VME expansion box. A cable connects the two modules. Choose a VME expansion box from Digital or use any standard VME box.

Logically it is implemented as a memory mapping adapter. From the perspective of the software, devices are accessed as if they were mounted directly on the system bus. Performs DMA directly into the system memory of a DECstation 5000 system. The CPU can directly accesses any cell in a device using programmed I/O or Memory Mapped (MMAP) I/O.

Digital has included the software support for the TURBOchannel card for VME in the latest version of ULTRIX for porting software drivers and has added other features such as programmable hardware byte-swapping to ease the development effort.

Special requirements: None

Interconnect: TURBOchannel

Company: Digital Equipment Corporation
See no. 2 of Sales Location

Order no.: DWTVX-XX

♦ DEC SCSI TURBOchannel Option Card
(SCSI Controller)

The SCSI option card, like the integral SCSI controller, is based on the NCR 53C94 Advanced SCSI Controller chip. The controller performs DMA to a 32-Kbyte x 32-bit buffer (128 Kbytes) on the option card. The processor uses I/O transactions to transfer the data between the buffer and system memory. Estimated peak transfer rate between SCSI devices and memory is 4 to 5 Mbytes/sec. Each SCSI interface supports up to seven devices via one 50-pin champ connector.

Special requirements: None

Interconnect: TURBOchannel & SCSI

Company: Digital Equipment Corporation

Order no.: PMAZ-AB

♦ TURBOchannel Extender Enclosure
(3 Additional Physical Option Slots and Storage Expansion)

The TURBOchannel Extender option consists of a single width TURBOchannel card which connects via an 18" long cable to the Extender enclosure. This allows one logical TURBOchannel option (e.g. PXG TURBO+) to be placed in the enclosure while freeing up the remaining slots in the system box for use with other TURBOchannel options

The enclosure also provides room for two half-height SCSI hard disks and one half-height SCSI removable media, which can be added onto the SCSI interface existing in the system box.

Special requirements: None

Interconnect: TURBOchannel & SCSI

Company: Digital Equipment Corporation

Order no.: PMTCE-AA (No options or disks)

♦ PARALINE SF40
(SCSI Bus Extender)

This device extends the SCSI bus to 1000 feet. Transparent plug-and-go operation. It meets and ANSI X3T9.2 standard, as well as agency approvals. It has a 2-year warranty. Converts SCSI signals to serial information and transmits thru fiber optic cable at more than 100 megabits/sec. Standalone unit with a wall-mount power supply.

Special requirements: None

Interconnect: SCSI

Company: PARALAN Corporation

♦ PARALINE SC20
(SCSI Bus Extender)

This device extends the SCSI bus to 500 feet. Transparent plug-and-go operation. It meets and ANSI X3T9.2 standards and agency approvals. It has a 2-year warranty. Converts SCSI signals to serial information and transmits thru a single coax cable at more than 100 megabits/sec. Standalone unit with a wall-mount power supply.

Special requirements: None

Interconnect: SCSI

Company: PARALAN Corporation

♦ PARALINE SD11
(SCSI Converter)

Converts between single-ended and differential SCSI devices. Transparent plug-and-go operation. Meets ANSI X3T9.2 standard. Handles fast SCSI (10 megabytes/sec). Designed to mount inside the computer, requires 5VDC+5% @ 1 amp max. Usable with 25 meters (82 feet) of differential cable plus 6 meters (20 feet) of single-ended cable.

Special requirements: None

Interconnect: SCSI

Company: PARALAN Corporation

♦ PARALINE SD10
(SCSI Converter)

Converts between single-ended and differential SCSI devices. Transparent plug -and-go operation. Meets ANSI X3T9.2 standard. Handles fast SCSI (10 megabytes/sec). Standalone unit with a wall-mount power supply. Usable with 25 meters (82 feet) of differential cable plus 6 meters (20 feet) of single ended cable.

Special requirements: None

Interconnect: SCSI

Company: PARALAN Corporation

♦ VMITCN-5521L
(VME Adapter)

This device allows DECstation 5000 platforms to read/write data from/into VME-based systems. Supports masters and slaves in VMEbus. Software is transparent and automatic byte/word swapping is supported. A link consists of one VME board, one TURBOchannel board, and a 25-ft. cable.

Special requirements: Device driver supplied

Interconnect: TURBOchannel to/from VMEbus

Company: VME Microsystems International

♦ VMITCN-5551
(Reflective Memory Network Adapter)

TURBOchannel reflective memory is a high-speed parallel network that supports up to 16 nodes at data rates of 20 Mbytes/sec. It can be used to interconnect TURBOchannel based machines or connect TURBOchannel based machines to the VMEbus. Data written to memory in one node is broadcast to all nodes in the network simultaneously.

Special requirements: Device driver supplied

Interconnect: TURBOchannel to/from VMEbus

Company: VME Microsystems International

FS no.: FS-VME01-MA

♦ DCP-1000
(Modem)

This fiber optic modem is for use with DRV11-WA controllers to extend connections up to 1 km. It can be used with Logical's DCT-1000 controller for TURBOchannel based platforms.

Special requirements: Logical DRV11-WA controllers

Interconnect: TURBOchannel

Company: The Logical Company

♦ BCT-2000
(Unibus Adapter)

The adapter enables up to 19 Unibus devices to be connected to a TURBOchannel based workstation. It supports both PIO and DMA Unibus data transfers and all four Unibus interrupt levels. PIO and DMA data transfers occur at maximum Unibus speeds, with throughput limited only by the Unibus device. The adapter consists of a single-slot TURBOchannel controller, a dual-width Unibus cable adapter module, and an eight-foot shielded interconnect cable.

Special requirements: Software is not provided

Interconnect: TURBOchannel

Company: The Logical Company

♦ TURBO-DRC
(DRV11 Interface)

A high-speed, general-purpose DMA interface by way of TURBOchannel that complies with the Q-BUS DMA interface DRV11-WA. It exchanges 16-bit parallel data between TURBOchannel and user's various devices and also between CPUs. The maximum DMA transfer rate is 800K words/sec based on half-duplex asynchronous system. To acquire a transfer capacity of a maximum 64K words/time, it maps a 128 Kbyte data area to TURBOchannel by a 2-port memory method. It is extensible up to 2 km for long distance transfer by relaying optical extender FIBER-LINK.

Special requirements: None

Interconnect: TURBOchannel

Company: Systems Design Service Corporation

♦ SCSI-LINK
(High-Speed SCSI Bus Extender)

This extender enables a SCSI bus to have a maximum cable length of 25 meters. The SCSI bus complies with ANSI 1X3.131-896 specifications. It has the bidirectional differential-type data transfer and conversion. An RS-485 differential transceiver built in. It supports arbitration parity disconnection/reconnection and asynchronous/synchronous data transfer. A maximum transfer rate of 4Mbytes/sec.

Special requirements: None

Interconnect: SCSI

Company: Systems Design Service Corporation

♦ Tactools
(Tactile Feedback Adapter)

A tactile feedback system for virtual reality and robotics applications. The operator receives tactile cues from mechanical elements (tactors) via computer control. Each tactor is individually controlled and can be actuated in impulsive and vibratory modes. Serial and MIDI interfaces. Drivers for UNIX and MS-DOS included.

Special requirements: None

Interconnect: EIA232

Company: Xtensory, Inc.

♦ VXI-TC5000
(TURBOchannel-to-VXIbus Adapter)

An interface kit that connects TURBOchannel based computers to VXIbus instrumentation. Equips a Digital computer for full slot 0 control of a VXIbus mainframe. Uses high-speed MXIbus cable for direct memory-mapped connection. Includes TC-MXI interface board that installs in one TURBOchannel slot, a VXI-MXI interface board that installs in a VXIbus mainframe, and interconnecting MXIbus cable, and complete NI-VXI bus interface software for programming VXI instruments under the ULTRIX system.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: National Instruments Corporation

♦ VME-TC5000
(TURBOchannel-to-VMEbus Adapter)

An interface kit that connects TURBOchannel based computers to VMEbus. Uses a high-speed MXIbus cable for direct memory-mapped connection to VME. Includes a TC-MXI interface board that installs in one TURBOchannel slot, VME-MXI interface board that installs in a VME chassis, interconnecting MXIbus cable, and complete bus interface software for programming VME devices under the ULTRIX system.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: National Instruments Corporation

♦ BCT-2100
(Q-bus Adapter)

The adapter enables the connection of up to 19 Q-bus devices to a TURBOchannel workstation. Supports both PIO and DMA Q-bus data transfers and all four Q-bus interrupt levels. PIO and DMA data transfers occur at maximum Q-bus speeds, with throughput limited only by the Q-bus device. The BCT-2100 consists of a single-slot TURBOchannel controller, a dual-width Q-bus cable adapter module, and an 8-foot shielded interconnect cable.

Special requirements: Software is not provided

Interconnect: TURBOchannel

Company: The Logical Company

♦ 497 VME Adapter
(TURBOchannel-to-VMEbus Adapter)

Provides VMEbus access to and from TURBOchannel based systems. Memory mapping allows memory-mapped PIO access to VMEbus address space. Built-in DMA engine provides block transfers between a Digital system and VMEbus memory at speeds up to 26 Mbytes sec; slave VMEbus block mode transfers to TURBOchannel are in excess of 10 MBytes/sec. Byte swapping and word swapping are provided in hardware. Interconnect the two adapter cards with a round EMI cable up to 25 feet long or a fiber-optic using Bit3 fiber-optic options, up to 2000 meters long. Add Dual Port RAM up to 8 Support software available for ULTRIX applications.

Special requirements: Auxiliary hardware required. I/O cable must be specified & purchased separately.

Interconnect: TURBOchannel

Company: Bit3 Computer Corporation

FS no.: FS-BIT01-AA

♦ Model Z
(Disk Array Controller)

Provides RAID-0 (striping), -3 (parallel transfer), or -5 (independent transfer) levels of operation. Supports five independent SCSI channels and up to seven disks per channel. Employs a RISC processor and flash memory. Provides fast and wide SCSI-2 connection to host and a fast SCSI-2 connection to disk drives.

Special requirements: None

Interconnect: SCSI

Company: DIGI-DATA Corporation

♦ SLAT3-DRV11
(DRV11 Interface)

This device allows the use of DRV11-based peripherals on a DECstation or VAXstation, or on most SCSI-based workstations. SCSI cable and facilitating software are provided. Host software reconstruction is not required.

Special requirements: No device driver needed

Interconnect: SCSI

Company: Uninet Peripherals, Inc.

♦ RAID 1,0 Cache Controller
(SCSI Fast-&-Wide to SCSI Fast)

This 386 based intelligent controller connects up to 14 high-performance SCSI Fast disks to a single-ended SCSI Fast-and-Wide bus. Configure the drives in any combination of mirrored sets, separated logical units, or concatenated logical units. A unique background back-up feature provides mirrored sets that enables users to continue operation uninterrupted during file-by-file back-up operations.

Special requirements: None

Interconnect: SCSI

Company: Diverse Logistics, Inc.

9 Output Devices

♦ ImageCorder PLUS
(3D Film Recorder)

"SEE MULTIMEDIA PERIPHERALS SECTION"

♦ Colorstation 424
(High-Performance Color and Monochrome Electrostatic Plotter)

This color and monochrome D-size hardcopy output (24" x 36") has both 200 dpi and 400 dpi resolutions and a standard plot management feature.

Special requirements: None

Interconnect: Centronics Parallel, Serial, Ethernet TCP/IP

Company: Raster Graphics, Inc.

FS no.: FS-RGE01-LA

♦ ColorStation 422
(Color Electrostatic Plotter)

This device provides color hardcopy output (22" x 34") with both 200 dpi and 400 dpi resolutions, standard, and is smaller, lighter, and quieter than competing models. Supports standard software, hardware interfaces.

Special requirements: None

Interconnect: Centronics parallel, serial

Company: Raster Graphics, Inc.

♦ ColorStation 436
(High-Performance Color and Monochrome Electrostatic Plotters)

The industry's fastest color and monochrome, E-size (36" x 50") hardcopy output with both 200 dpi and 400 dpi resolutions, and standard plot management feature. Writing speed is 6 ips.

Special requirements: None

Interconnect: Centronics parallel, serial, Ethernet TCP/IP

Company: Raster Graphics, Inc.

♦ PAGESCAN 3
(Printer)

The PAGESCAN 3 can generate 18" x 24" positive or negative prints on plain paper or vellum at resolutions up to 1000 x 1000 dpi. It can make inexpensive proofs and even create camera ready copy for some applications. It can also eliminate page paste-up and tiling by generating 18" x 24" prints in one step. The PAGESCAN can also produce 11" x 17", 8.5" x 11 and any size in between, making it one of the most versatile plain paper recorders available today.

Special requirements: Device driver supplied

Interconnect: SCSI

Company: Graphic Enterprises of Ohio, Inc.

FS no.: FS-GRA01-LA

♦ Virtual Reality Displays
(Output Device)

These displays permit stereo vision, hands-free viewing, and enhance the subjective "presence" of virtual reality. These devices are offered separately or as a part of a virtual reality consulting solution.

Special requirements: None

Interconnect: EIA232

Company: Xtensory, Inc.

♦ Color Printer - CHC-Series
(Color Printers)

Non-impact, full-color thermal transfer printing and non-impact dye-sublimation thermal transfer. Resolution 300 dpi. 50 sec/copy A4 print speed; 70 sec/copy for A3.

Special requirements: None

Interconnect: Centronics, SCSI, RGB Video

Company: Shinko Electric Co., LTD Japan

♦ SW 4 AR
(Four Input Analog Switcher)

Allows four DECstations to share one monitor. It is a four input, one output analog RGB and Sync switcher. The video bandwidth is 250 Mhz. Inputs are 75 Ohm terminated RGB with separate Composite Sync or Sync-on-Green on BNC connectors. Has a remote control connector (contact closure) and a 2U metal enclosure. Optional 2U rack shelves are available.

Special requirements: None

Interconnect: RGBS

Company: Extron Electronics

♦ ADA 3 180
(Analog Distribution Amplifier)

This device connects a DECstation to three monitors. It is a one input, three output analog distribution amplifier with a bandwidth of 180 MHz. This distribution amplifier has a variable RGB gain, accepts RGB Sync or Sync-on-Green. TTL or Analog Sync Level Selector Switch, .7 volt/1 volt video gain switch. It is in a metal enclosure.

Special requirements: None

Interconnect: RGBS

Company: Extron Electronics

♦ ADA 2 300 HV
(Analog Distribution Amplifier)

This device connects a DECstation to two monitors. It is a one input, two buffered output analog distribution amplifier. The video bandwidth is 300 MHz. Accepts RGB Sync-on-Green, separate horizontal and vertical sync, or combined H/V sync. It has a metal enclosure.

Special requirements: None

Interconnect: RGBHV

Company: Extron Electronics

♦ ADA 4 300 MX
(Analog Distribution Amplifier)

Connects a DECstation to four monitors. It is a one input four output analog distribution amplifier with a bandwidth of 300 MHz. This unit accepts RGB Sync or Sync-on-Green. Has a variable RGB gain, is AC or direct coupled. It has a .7 volt/1 volt video gain switch, TTL Sync or Analog Sync Selector Switch, an internal power supply, and it is in a metal enclosure.

Special requirements: None

Interconnect: RGBHV

Company: Extron Electronics

♦ SW 2 AR
(Two Input Analog Switcher)

Allows two DECstations to share one monitor. It is a two input, one output analog RGB and Sync switcher. It has a video bandwidth of 250 MHz. Inputs are 75 Ohm terminated, RGB with separate Composite Sync or Sync-on-Green on BNC connectors. Has a remote control connector and a 2U metal enclosure. Optional 2U rack shelves are available.

Special requirements: None

Interconnect: RGBS

Company: Extron Electronics

♦ ADA 6 300 MX HV
(Analog Distribution Amplifier)

Connects a DECstation to six monitors. It has a video bandwidth of 300 MHz, variable RGB gain and accepts RGB Sync-on-Green, separate horizontal and vertical Sync or combined H/V Sync. It is AC or direct coupled and has a .7 volt/1 volt video gain switch, and internal power supply. Outputs are composite Sync or separate H & V Sync. 2.5U metal enclosure.

Special requirements: None

Interconnect: RGBHV

Company: Extron Electronics

♦ 68000 Series, Color Electrostatic Plotter
(Color Plotters)

Deliver wide-format color plots directly from compressed raster data or random vector data. 400 dpi resolution; 8,192 colors. Two serial and two parallel ports. Toning system reduces toner waste and prevents escape of fumes. Faster rasterization speed for plots is also available.

Special requirements: Device driver supplied Auxiliary hardware required.

Interconnect: RS-232C, Centronics, Ethernet

Company: CalComp USA
CalComp Europe
NS CalComp Corporation

♦ 67436, Monochrome Electrostatic Plotter
(Monochrome Plotter)

Produces wide-format plots directly from compressed raster data or random vector data. 400 dpi resolution, 512 fill patterns, 8,192 line types, and 256 layers for information. Two serial and two parallel ports. Load feature improves multiple plot jobs. Increased disk capacity is also available.

Special requirements: Device driver supplied. Auxiliary hardware required.

Interconnect: RS-232C, Centronics, Ethernet

Company: CalComp USA
CalComp Europe
NS CalComp Corporation

♦ 20xx Series, Pacesetter
(Pen Plotters)

New advances in speed and reliability allow high-quality inked output. Plotting speed of up to 42 inches per second (ips) and 20 ips in final mode. A new pen design increases ink capacity by 30%. Transparent ink reservoirs and a pen grouping function. An intelligent control panel guides user.

Special requirements: Device driver supplied. Auxiliary hardware required.

Interconnect: RS-232C, Centronics, Ethernet

Company: CalComp USA
CalComp Europe
NS CalComp Corporation

♦ 1023SP, PencilMaster
(Plotter)

Features a rotating pen turret housing eight pens in any type combination. Low-mass carriage penholder moves swiftly to the turret to exchange a pen. Pen type is automatically sensed and parameter adjustments are made for pen force, velocity, and acceleration. Plot speeds possible of up to 30 ips (762 mm) on axis and 42 ips (1,077 mm) at a 45-degree angle, while acceleration can be 2.8G at a 45-degree angle.

Special requirements: Device driver supplied. Auxiliary hardware required.

Interconnect: RS-232C, Centronics, Ethernet

Company: NS CalComp Corporation

♦ ColorMaster Plus
(Color Printers)

Produce laser-quality graphics on letter, A-size (A4), tabloid, B-size (A3), paper, or transparency film. 300 dpi resolution and thermal transfer technology. Compatible with Adobe's PostScript language. VRC models have vector-raster conversion. RGB versions can capture images from the host video screen. Raster-controller models are also available.

Special requirements: Device driver supplied. Auxiliary hardware required.

Interconnect: RS-232C, Centronics, Ethernet, AppleTalk

Company: CalComp USA
CalComp Europe
NS CalComp Corporation

♦ DrawingMaster Plus
(Plotters)

High-performance systems are designed for moderate to high-volume use. Produce one- or two-color plots without pens, ribbons, or toner. Quiet, chemical-free operation. Resolution of 406 dpi (52424 and 52436 models) or 200 dpi (52224 and 52236 models). Three serial and one parallel multiplexed ports.

Special requirements: Device driver supplied. Auxiliary hardware required.

Interconnect: RS-232C, Centronics, Ethernet

Company: CalComp USA
CalComp Europe
NS CalComp Corporation

♦ SW 6 AR MX HV
(Analog and Synchronous Switcher)

This 6-input, 300 MHz analog RGB and sync bidirectional switcher. Inputs are 75 ohm terminated. RS-232 or contact closure control. Accepts RGBs, RGsB, or RGBHV. Built-in auto switching (dip switch activated). May be used as NTSC/PAL and SVHS. 2U metal enclosure. Internal power supply. Optional 2U rack shelf, memory backup, auto sequencing, and blanking available.

Special requirements: None

Interconnect: RGBHV/NTSC/PAL

Company: Extron Electronics

♦ RGB 120
(Computer Video Interface)

This device is a wide-bandwidth, 200 MHz, universal analog and ELC computer video interface. Providing a horizontal frequency range from 15 to KHz and a 200 MHz video bandwidth it allows any DECstation to connect to a compatible large screen data projector or data monitor. Includes vertical and horizontal picturing centering, serration pulse removal switch, sync output polarity tracking, internal RGV gain controls, auto synch output detections, and auto sync stripping from all RGB video channels.

Special requirements: Auxiliary hardware required

Interconnect: RGBHV

Company: Extron Electronics

10 Monitors and Display Systems

♦ C21MAX
(21-inch Flat Screen Color Monitor)

Non-interlaced resolution ranging from 1024 x 768 to 1600 x 1280 (autosynchronous). Automatically adjusts to horizontal scanning frequencies of 48 KHz to 96KHz and frame rates to 60 Hz to 80 Hz.

Special requirements: None

Interconnect: 1) Analog BNC
2) Analog 13W3
3) ECL Digital

Company: Image Systems Corporation

♦ M24LMAX
(24-inch Monochrome/Greyscale Monitor)

Non-interlaced resolution ranging from 1024 x 768 to 2048 x 1536 (autosynchronous). Automatically adjusts to horizontal scanning frequencies of 48 KHz to 108 KHz and frame rates of 60 Hz to 80 Hz.

Special requirements: None

Interconnect: 1) Analog BNC
2) Analog 13W3
3) ECL Digital

Company: Image Systems Corporation

♦ M21LMAX
(21-inch Monochrome/Greyscale Landscape Monitor)

Non-interlaced resolutions ranging from 1024 x 768 to 2048 x 1536 (autosynchronous). Automatically adjusts horizontal scanning frequencies of 48 KHz to 108 KHz and frame rates of 60 Hz to 80 Hz.

Special requirements: None

Interconnect: 1) Analog BNC
2) Analog 13W3
3) ECL Digital

Company: Image Systems Corporation

♦ M21PMAX
(21-inch Monochrome/Greyscale Portrait Monitor)

Non-interlaced resolutions ranging from 768 x 1024 to 1280 x 1664 (autosynchronous). Automatically adjusts to horizontal scanning frequencies of 48 KHz to 108 KHz and frame rates of 60 Hz to 80 Hz.

Special requirements: None

Interconnect: 1) Analog BNC
2) Analog 13W3
3) ECL Digital

Company: Image Systems Corporation

♦ M24LV-64MAX
(24-inch Monochrome/Greyscale Landscape Monitor)

Resolutions ranging from 15 KHz interlaced to high resolution 1280 x 1024. Non-Interlaced for applications requiring automatic adjustment from TV speeds of 15.75 KHz to 66 KHz and frame rates of 55 Hz to 90 Hz.

Special requirements: None

Interconnect: 1) Analog BNC
2) Analog 13W3
3) ECL Digital

Company: Image Systems Corporation

♦ C21LV-65MAX
(21-inch Flat Screen Color Landscape Monitor)

Resolutions ranging from 15 KHz interlaced to high resolution 1280 x 1024. Non-Interlaced for applications requiring automatic adjustment from TV speeds of 15.75 KHz to 65 KHz and frame rates of 55 Hz to 90 Hz.

Special requirements: None

Interconnect: 1) Analog BNC
2) Analog 13W3
3) ECL Digital

Company: Image Systems Corporation

♦ M21LV-65MAX

(21-inch Monochrome/Greyscale NTSC to 65 KHZ Landscape Monitor)

Resolutions ranging from 15 KHz interlaced to high resolution 1280 x 1024. Non-Interlaced for applications requiring automatic adjustment from TV speeds of 15.75 KHz to 65 KHz and frame rates of 55 Hz to 90 Hz.

Special requirements: None

Interconnect: 1) Analog BNC
2) Analog 13W3
3) ECL Digital

Company: Image Systems Corporation

11 Imaging and Scanners

♦ Pixel!SCAN
(Scanner Subsystem)

Pixel!SCAN lets you control the mode, resolution, indensity and contrast of your scan. Line art scans offer easy way to capture graphics. Optional OCR (Optical Character Recognition) package can eliminate the need to retype existing documents. Reads most popular typefaces and fonts. You can edit, zoom, cut, scale, flip, mirror, rotate, and perform color inversion on captured image. Pixel!SCAN interfaces the Howtek ScanMaster series, and HP ScanJet Plus scanners and the Kodak XL7700 Color printer to the DECstations. Software device driver supplied.

Special requirements: Auxiliary hardware and SCSI/ CAM may be required.

Interconnect: SCSI and IEEE488

Company: Mentalix, Inc.

♦ Digital Image Accelerator
(Accelerator)

This single-slot board performs the following functions on bitonal images:

- Decompression of bitonal images: CCITT Groups III-2D, III-3D, IV
- Scaling (M-> N, where M,N=->63)
- Orthogonal rotation

Any above function is capable of being performed on a A/AA size, 300 dpi, bitonal, CCITT Group IV compressed image in less that 1 second.

Special requirements: Order directly from group below. Software is available to integrate into ULTRIX Workstation Software V4.0 or higher.

Interconnect: TURBOchannel

Company: Digital Equipment Corporation
See no. 1 of Sales Location

Order no.: PMAI-AA

♦ Scanmaster D4000
(Drum Color Scanner)

This device is capable of scanning reflective or transparent images up to 11.2” x 10” at resolutions as high as 4000 dpi. Using three photo-multiplier tube sensors to collect the RGB data, the Scanmaster D4000 can achieve a dynamic range of 3.8 and capture a full 12 bits of data per color in a single pass.

Special requirements: Pixel! SCAN from Mentalix, Inc. and SCSI/CAM

Interconnect: SCSI and GPIB

Company: Howtek, Inc.

♦ Scanmaster 3+
(Flatbed Color Scanner)

This device is a 1200 dpi flatbed color scanner that accommodates both reflective and transparent copy. The Scanmaster 3+ scans continuous tone, halftone, line art, and text image types in full 24-bit color or 256 gray levels and binary (1-bit mode).

Special requirements: Pixel! SCAN from Mentalix, Inc. and SCSI/CAM

Interconnect: GPIB

Company: Howtek, Inc.

FS no.: FS-HTK01-UA

♦ Scanmaster 3
(Flatbed Color Scanner)

This device is a 400 dpi, full B-size (A3-size) flatbed color scanner, both reflective and transparent copy. A full 24-bits of data is captured. The Scanmaster 3 is an ideal input device for such applications as desktop publishing, graphic arts, and pre-press and general imaging and design.

Special requirements: Pixel! SCAN from Mentalix, Inc. and SCSI/CAM

Interconnect: GPIB

Company: Howtek, Inc.

FS no.: FS-HTK01-UB

♦ Scanmaster 35 Plus
(35 mm Slide Scanner)

This 35 mm slide scanner has a scanning resolution of 2000 x 2000 dpi and full 180 degree rotating that accommodates either positives or negatives, which can be mounted or unmounted, and film strips. The Scanmaster 35 Plus scans at 12 bits per color (RGB) with a total accuracy of 24 bits per pixel (4096 gray levels).

Special requirements: Pixel! SCAN from Mentalix, Inc. and SCSI/CAM

Interconnect: GPIB

Company: Howtek, Inc.

FS no.: FS-HTK01-UC

♦ Personal Color Scanner
(Flatbed Color Scanner)

This is a 600 dpi, 8.5” x 14” flatbed color scanner that scans 24-bit color, 256 levels of grayscale including black and white. Such leading image editing software as ColorLab, TEMPRA, PhotoShop LE, and Picture Publishing Plus is bundled with the scanner. The Personal Color Scanner is ideal for desktop publishing and graphic design.

Special requirements: Pixel! SCAN from Mentalix, Inc. and SCSI/CAM

Interconnect: Bi-directional parallel

Company: Howtek, Inc.

♦ ScanFiler
(OCR Scanner)

This device is a high-speed OCR document and image scanning solution for VMS and RISC/UNIX based workstations. Its features include file management, full text search and retrieval, and greyscale scanning functions with powerful image enhancement features. ScanFiler interfaces the AVR, UMAX, and Ricoh scanners. *For a current list of other scanners supported, please contact the vendor.*

Special requirements: Auxiliary hardware required

Interconnect: SCSI

Company: ImageWave Corporation

♦ SCSI-Scan
(Scanner Subsystem)

SCSI-Scan allows the direct connection of Agfa (all scanners) and Ricoh Scanners (A4 and A3 format, option ADF) with all DECstations having an SCSI interface. The scanning program is menu-driven and runs under the DECwindows or OSF/Motif graphical user interfaces. The menu interface is available in German and English. SCSI-Scan supports all functions provided by the respective scanners. The possible output file formats for scanned images are DDIF for Digital products, IMG for Interleaf, and TIFF for PC programs.

Special requirements: SCSI-CAM

Interconnect: SCSI

Company: InnoData GmbH

♦ HP ScanJet IIc Scanner
(Color Scanner)

This scanner has 23-bit color capability that allows it to recognize more than 16.7 million colors. It uses a three-stripe, charge-coupled device scanning mechanism that completes a color scan in a single pass. The single-pass scan provides better color registration and is faster than three-pass color scanning technologies. The HP ScanJet IIc scanner has a 8-bit grayscale image scanning and 400 dpi resolution for fast, high-quality image and text scanning.

Special requirements: Mentalix Pixel!FX and SCSI-CAM

Interconnect: SCSI

Company: Hewlett Packard Company

♦ Scanner-Face
(Scanner Subsystem)

A complete DECwindows- or Motif-based document scanning application, this product works on both VAXstations and DECstations, as well as X Windows terminals. It allows the user to acquire a scanner (attached either locally or over the network), set up the scanner, initiate the scanning process, view the scanned image, manipulate the image with the clean-up editor, and store the image in DDIF, TIFF, or CALS formats. Files may be scanned and stored as individual pages or as multipage documents. The product is fully CALS compliant and has been chosen as part of the JCALS program. Scanner-Face is fully compatible with the Scan-EVA/View document image viewing application and supports the following scanners: Digital’s MD-410 scanner (connected to SCSI) on VAXstations and DECstations; Vidar’s Large Format document scanner and apertre card scanner on VAXstations (DECstations by the end of March). *For a current list of other scanners supported, please contact the vendor.*

Special requirements: SCSI/CAM software required (See Appendix C)

Interconnect: SCSI

Company: PCS Systems, Inc.

12 Graphics

♦ DEC MX
(Monochrome Graphics Adapter)

The MX provides high-resolution monochrome graphics and is ideally suited for CASE and technical publishing applications that demand crisp images. Resolution is 1280 x 1024 and the refresh rate is 72 Hz. The MX provides no specialized hardware acceleration for graphics and is classified as a frame buffer. Offscreen image storage is mapped into main memory. 1 display plane. [Monitor 19” VR319].

Special requirements: None

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order no.: PMAG-AG

♦ DEC CX
(2D Color Graphics Adapter)

The CX support 8-plane color and 8-plane grayscale graphics. It is ideally suited for entry level design automation, financial modeling and desktop presentation graphics. It provides 1024 x 864 resolution with refresh of 60 Hz. The CX provides no specialized hardware acceleration for graphics and is classified as a frame buffer. Off-screen pixmap storage is mapped into main memory. 8 display planes. [Monitor 16” VR297, 19” VR299]

Special requirements: None

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order no.: PMAG-BB

♦ DEC PX
(2D Accelerated Graphics Adapter)

The PX delivers fast 2D vector graphics performance. It is ideally suited for ECAD and entry level MCAD wireframe. It provides 8-planes of color and simultaneous 8 plane double buffering. It provides 1280 x 1024 resolution with refresh of 66 Hz. The PX is classified as a 2D accelerator. The PX accelerates both 2D vectors and 2D polygon fill operations. Total planes 16. [Monitor 16-inch VRT16, 19-inch VRT19, 19-inch VR319]

Special requirements: None

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order no.: PMAG-CB

♦ DEC PXG
(3D Graphics Adapter)

The PXG is a 2-slot wide option, which supports accelerated 3D graphics. It is ideal for design automation, architectural design, seismic interpretation, molecular modeling and true color applications, It is very flexible and can be configured with either 8 display planes or 24 display planes and with or without a Z-buffer. Both 8 and 24-planes come with enough additional planes for full double buffering. Resolution is 1280 x 1024 with a refresh of 66 Hz. The PXG is classified as a 3D accelerator. It accelerates both 3D vectors and polygons. Geometry hardware: i860 (40 Mhz) [Monitor 16” VRT16, 19” VRT19]

Special requirements: None

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order no.: PMAG-DB/EB

♦ PXG Turbo
(3D Accelerated Graphics Adapter)

The PXG Turbo is a 3-slot wide option, designed for high-performance 3D modeling, visualization and animation applications. It provides 24 display planes, 24-bit double buffering and a 24-bit Z-buffer. 24 additional planes are also provided for offscreen image storage. Resolution is 1280 x 1024 with refresh of 66 Hz. The PXG Turbo is classified as a 3D accelerator. Geometry hardware: i860 (44 Mhz). [Monitor: 16” VRT16 and 19” VRT19]

Special requirements: None

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order no.: PMAG-FB/HB

♦ DEC HX Frame Buffer
(8-plane, Color/Grayscale Frame Buffer)

This one-slot graphics option has 8-bit planes with 1280 x 1024 resolution. The HX is available in several versions, each having a secondary mode with lower resolution and lower refresh rate so that a wide range of monitors can be supported. The Smart Frame Buffer (SFB) ASIC provides acceleration for 2D line drawings, stippled polygon filling, and pixel copy, and raster operations. The HX is suitable for all graphics applications that need only 8-bit color, and do not require hardware 3D acceleration.

Special requirements: ULTRIX/UWS V4.2A Software

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order nos.: PMAGB-BC/CBY (60/72 Hz)
PMAGB-BA/CY (66/72 Hz)

♦ DEC Frame Buffer
(Dual Screen, Ultra-High-Resolution)

This product permits the integration of two Tektronix GMA202 portrait displays Option 61 150 dpi A4 bitonal monitors. Performance specifications:

- Tektronix GMA202
- Screen resolution:150 dpi
- Screen size:1248 x 1794 pixels
- 8.32 x 11.96 inches
- 211 x 304 mm
- Screen refresh rate:70 Hz non-interlaced

Special requirements: Order directly from group below. Software is available to integrate the hardware into ULTRIX Workstation Software V4.2. (Currently available only for UWS V4.2).

Interconnect: TURBOchannel

Company: Digital Equipment Company
(See no. 1 of Sales Location)

Order no.: PMAM-AA

♦ DEC TX Color Frame Buffer
(24-plane, True-Color Frame Buffer)

A 24-plane color frame buffer occupying a single TURBOchannel slot and providing true color capabilities with no graphic acceleration. Supports 1280 x 1024 monitors, such as the VRT19, VRT16, VR320 and supports both 8-bit and 24-bit access mode for graphics. A variation of the product supports either a 66 Hz or 72 Hz monitor.

Special requirements: ULTRIX/UWS V4.2-A software. When used as a replacement for the CX graphics card, an upgrade to a 1280 x 1024 monitor is necessary.

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order nos.: PMAG-JA/JB (66 Hz)
PMAGB/JA/JB (72 Hz)

♦ DECvideo/PIP (Picture-In-Picture) *(Live Video in a Window)*

A product in the DECmedia set of multimedia enabling products, this daughter card for the TX color frame buffer provides live NTSC (30 frames/sec), PAL, or SECAM (25 frames/sec) full-motion video-in-a-window. Video windows can be scaled and individual frames can be grabbed for use later in documents or presentations. Includes the XMedia Tools Runtime Kit license. Accepts composite, S-video, or RGB signals as input and delivers the required RGB output signals for the monitor.

Special requirements: TX graphics option

Interconnect: TURBOchannel

Company: Digital Equipment Corporation

Order no.: AV10U-AA/DA

♦ CX3500 Graphics Controller *(2K x 2K Controller)*

The CX3500 2560 x 2048 controller is coupled to Digital's DECstation 5000 system through the TURBOchannel interconnect. The CX3500 high-resolution, single-board graphics controller integrates into a user's console or configures as a full-function ULTRIX workstation. The CX3500 features scalable graphics performance up to 2 million vectors per second and supports industry standard software: GKS, PHIGS, X-Windows, and PEX.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: BARCO Chromatics, Inc.

♦ 5700 Series Graphics Controller *(VME Controllers)*

This Series of single-slot 6U VME boards are designed for ATC, C3I, and other high-resolution, data-intensive applications. In addition to the 2048 x 2048 display controller, dynamic video and a radar scan converter are options supported under the X Windows PEX environment.

Special requirements: TURBOchannel-to-VME bridge

Interconnect: VME

Company: Metheus Corporation

♦ XVideo Multimedia Display Adapter *(Video In/Out Accelerated Graphics)*

This adapter is a 2-slot-wide option card that supports high-performance multimedia applications, and provides accelerated graphics performance for both 24- and 8-bit applications. Resolution is 1280 x 1024 at a 66 Hz refresh rate. Supports near realtime frame capture from live video inputs in NTSC, PAL, or SECAM formats. Two live, full-size video inputs can be displayed in separate windows simultaneously. Outputs images in realtime, including graphics, text, or motion video inputs from any window on the high-resolution display to external video equipment. On-board hardware allows image compression and/or decompression using the ISO standard JPEG algorithm. JPEG compression techniques allows recording of motion video and playing back from hard disk or CD-ROM in near realtime. Decompression allows motion video images to be scaled, clipped, stenciled, or overlaid with 24-bit graphics or text to provide impressive special effects for authoring applications. Supplied with ULTRIX drivers and an X11R5 server supporting Xv and JPEG video extensions. Full client API support facilitates integrating the product into multimedia applications.

Special requirements: ULTRIX V4.2A Software

Interconnect: TURBOchannel

Company: EnerAnalytics

13 Accelerators

♦ SKYstation-DEC
(Applications Processor)

SKYstation is an add-on “pizzabox”, designed for the desktop that runs applications at near supercomputer performance. Based on Intel’s i860 and i960 RISC processors, SKYstation provides peak performance levels of: 65 MIPSVAX (VAX Dhrystones), 60 MFLOPS (64-bit), 80 MFLOPS (32-bit).

SKYstation’s comprehensive software development toolset and DEC/ULTRIX compatible runtime system make it an application accelerator. It runs entire applications intact, calling upon the workstation operating system for file system, network, and display services as needed. SKYstation’s compatibility with open systems standards provides a high degree of connectivity. To tap SKYstation’s performance, compile your C or FORTRAN source code with SKYvec the enabling technology.

Special requirements: Device driver supplied and SCSI-CAM

Interconnect: SCSI

Company: SKY Computers, Inc.

FS no.: FS-SKY03-P

♦ SuperCard Turbo
(Single-Slot Vector Processor)

This Intel i860 based vector processor is rated at 100 MFLOPS peak performance. SuperCard Turbo is supported by a robust PC hosted, software development environment, a compiler, debugger, and profiler, as well as CSPI‘s highly optimized signal processing libraries. SuperKit runtime software allows users to program the SuperCard Turbo from the host or down load compiled applications, including full I/O support.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: CSP, Inc.

14 Hardware Development Tools

♦ FS 16564 Preprocessor
(Futurebus+ Preprocessor)

Provides a reliable and convenient interconnection between the Futurebus+ system bus and a Hewlett-Packard Logic Analyzer. The preprocessor has BTL transceivers and protocol sensitive clocking logic to latch the bus data for logic analyzer capture. 32-64- and 128-bit solutions will be available with a central arbiter as optional. When the preprocessor is used with the HP 16550A Logic Analyzer, the monitor provides 50 MHz state analysis and 500 MHz timing analysis.

Special requirements: Auxiliary hardware required

Company: Future+ Systems

♦ TURBOchannel Board
(Option Module for Development)

The CB is a simple one-slot TURBOchannel module that performs the four basic TURBOchannel protocol transactions: I/O read, I/O write, DMAread, and DMAwrite. A full TURBOchannel option design example for option developers, it can reduce engineering effort required for a successful TURBOchannel implementation, thereby shortening time-to-market.

This board can be acquired as part of the TURBOchannel Developer's Tool Kit (Package 3). The Tool Kit contains resources needed for TURBOchannel option development including example code and on-line tools for device drivers and ROMs, and schematics, PAL equations, and other resources.

Special requirements: None

Interconnect: TURBOchannel

Company: ITS - Innovative Technical Solutions

♦ FUTUREBUS+ Interface Chip Set (TFB2000 Family)
(Development ASICs)

The TFB2000 Family provides a highly integrated solution to support high-performance systems, whether cache-based multiprocessor systems or I/O based subsystems. The data path unit (TFB2022), I/O controller (TFB2002), and arbitration bus controller (TFB2010) are available now. These devices provide a 64/32-bit interface solution for FUTUREBUS+ and autonomous support for data flow into and out of a module, the TFB2010 (ABC) provides distributed arbitration capability and is the building block for a programmable central bus arbiter (TFB2011). A complete line of transceivers is now in various stages of development.

Special requirements: None

Interconnect: Futurebus+

Company: Texas Instruments

15 Coming Attractions: TURBOchannel Products

Products in this section are not shipping. The vendor has notified TRI/ADD that the hardware development is complete but the software and qualifications remain to be completed. The information is provided as a service to Digital customers for planning purposes.

♦ TURBO-OLIVIA
(High-Speed Communications)

Opto coupled technical I/O with high-performance throughput and wide spread amount of analogous as well as digital I/O channels. Sustained 10 Mbytes/sec. for each direction, interrupt latency of less than 1 microsec.

Interconnect: TURBOchannel

Company: IRTV GmbH

Contact: Ute Hartmann

♦ DKP-2
(Communications Interface)

Two-lines for different field bus protocols (e.g. Bitbus, MODnet, SINEC, SUCONET, Profibus, several DIN). Supports RS-232, RS-485, RS-422, or fiber connection.

Special requirements: None

Interconnect: TURBOchannel

Company: GEI Gesytec GmbH

Contact: M. Boehlke
F.J. Leuchter

♦ DKP-4
(Communications Interface)

Four-lines for different field bus protocols (e.g. Bitbus, MODnet, SINEC, SUCONET, Profibus, several DIN). Supports RS-232, RS-485, RS-422, or fiber connection.

Special requirements: None

Interconnect: TURBOchannel

Company: GEI Gesytec GmbH

Contact: M. Boehlke
F.J. Leuchter

♦ TC-LOD
(LON Gateway)

LON (Local Operating Networks) interface for sensor and control devices.

Special requirements: None

Interconnect: TURBOchannel

Company: GEI Gesytec GmbH

Contact: M. Boehlke
F.J. Leuchter

♦ MAGMA Fast Wide SCSI
(Fast and Wide SCSI Adapter)

A 16-bit Fast, Wide SCSI-2 host adapter on a single-width TURBOchannel option. Supports 16 devices with data rates up to 20 Mbytes/sec. Supports DMA transfers. Supports all SCSI-2 devices with proper cables and/or adapter. Either single-ended or differential.

Special requirements: None

Interconnect: TURBOchannel

Company: MAGMA

Contact: Michael Seidel

♦ MAGMA 8DMA and 16DMA
(Serial Communications Controllers)

A family of high-performance, low-CPU overhead TURBOchannel options designed to provide high-speed asynchronous serial communications, while using less than 10% of the CPU at maximum throughput rates. All options provide full-duplex operation on all ports at speeds up to 128K bps per port simultaneously. Maximum speed supported is 256K bps. All ports support full modem control. Products vary as to how many ports are supported.

Special requirements: None

Interconnect: TURBOchannel

Company: MAGMA

Contact: Michael Seidel

♦ TC-500
(MIL-Std-1553 Interface)

This interface can act as a remote terminal, bus controller, or monitor terminal. An on-board DMA engine ensures rapid access of the data for monitoring applications when entire bus data needs to be examined and perhaps stored by the workstation.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

♦ TC-910
(Telecommunications Interface)

A TURBOchannel-to-T1 telecommunications interface, this interface is compatible with the CCITT recommendation G.703 & G.704, 1.544 Mbit/sec PCM standard. The single-slot module includes a line interface unit, CRC-4 Encode/Decoder, PCM transceiver, buffer memory and a DMA interface to the TURBOchannel interconnect. The module demultiplexes the 24-channel inbound data before DMA to the TURBOchannel system.

Special requirements: Auxiliary software required

Interconnect: TURBOchannel

Company: Design Analysis Associates, Inc.

♦ 495 Q22-bus Adapter
(TURBOchannel-to-Q22-Bus Adapter)

Provides Q22-bus access to and from TURBOchannel based systems. Memory mapping allows memory-mapped PIO access to Q22-bus address space. Byte swapping and word swapping are provided in hardware. Interconnect the two adapter cards with a round EMI cable up to 25 feet long or a fiber-optic cable, using Bit3 fiber-optic options, up to 2000 meters long. Add Dual Port RAM up to 8 Mbytes. Support software coming for VMS applications or TURBOchannel platforms.

Special requirements: Auxiliary hardware required. I/O cable must be specified and purchased separately.

Interconnect: TURBOchannel

Company: Bit3 Computer Corporation

♦ CTC-3000
(Disk/Tape/Optical Adapter)

This SCSI-to-TURBOchannel adapter provides high throughput and I/O performance for virtually any combination of SCSI disk, tape, optical, and jukebox peripheral devices. The Fast and/or Fast-and-Wide SCSI-2 host adapter mounts directly into any Digital DECstations, DECsystems 5000 or ALPHA AXP-based computer and allows up to seven SCSI single-ended or differential devices to be connected to each CTC-3000 board.

Designed to be easily installed and configured the CTC-3000 family offers a peripheral interface throughput of up to 20 MBytes/sec and a host interface throughput of up to 100 MBytes/sec.

Special requirements: Device driver supplied

Interconnect: TURBOchannel

Company: CMD Technology, Inc.

♦ SA-700 TURBOchannel Adapter
(SCSI Fast & Wide)

A 16-bit SCSI Fast capability for workstations and servers TURBOchannel connectivity. This high-performance SCSI adapter provides an ideal interface for RAID storage systems, hierarchial storage devices, and high-speed communication equipment. Up to seven single-ended target nodes are supported. An optional differential interface is available.

Special requirements: None

Interconnect: TURBOchannel

Company: Diverse Logistics, Inc.

16 Coming Attractions: Futurebus+ Products

♦ Model HIPPI-800
(HIPPI Interface Board)

This HIPPI channel interface, on a single 12U form factor board, which is Futurebus+ profile B compatible. The HIPPI standard (ANSI X3T9.3) defines a point-to-point, 100-MByte/sec. dual-simplex channel, used for interconnecting workstations, supercomputers, high-speed peripherals, etc. A 33MHz 68030 manages the HIPPI channels and initiates transfers based on a memory-based command structure. This user interface is controlled by routines which run on our board, under a VxWorks realtime kernel, and provides a very simple, host-independent software environment. HIPPI switches and fiber converters provide additional versatility.

Special requirements: Device driver supplied/ Auxiliary software required

Interconnect: Futurebus+

Company: Myriad Logic, Inc.

♦ Model MEM-840
(Memory Board)

This board provides large memory capacity on a single 12 SU Futurebus+ Profile B board. Capacity is 16 to 512 MBytes and is field upgradable via SIMM modules. The board is 32- or 64-bit compatible as a slave device and supports compelled and packet modes. Full parity protection is provided to ensure data integrity. The board design is optimized for applications requiring high bandwidth or realtime data throughput.

Special requirements: None

Interconnect: Futurebus+

Company: Myriad Logic, Inc.

♦ Model TRN-825
Model TRN-810
(Transputer TRAM Carrier)
(Transputer Interface Board)

This device allows large transputer networks to be configured within a Futurebus+ chassis. This board provides 18 TRAM sites and brings serial links to the panel and backplane for interconnections. All serial links are software configurable. The TRN-810 Futurebus+ Transputer Interface is a companion board that provides an intelligent buffered data path between the Futurebus+ backplane and the network of transputers. The board is Profile B compatible and supports both compelled and packet modes.

Special requirements: Device driver supplied/ Auxiliary software required

Interconnect: Futurebus+

Company: Myriad Logic, Inc.

♦ Model DIR-710
(Sony Tape Interface)

This Sony DIR-1000 high-speed tape recorder interface on a Futurebus+ Profile B board attaches the Sony Recorder to Digital's ALPHA AXP systems at rates up to the 32 MBytes/sec maximum for the recorder. The unit runs at various discrete rates and can store up to 96 Gbytes on a single tape cartridge. The interface supports automatic fill generation and removal for rate matching and has a correlator function for high-speed tape searching. Compelled and packet mode transfers are supported on this single 12SU board.

Special requirements: Device driver supplied/ Auxiliary software required

Interconnect: Futurebus+

Company: Myriad Logic, Inc.

17 Vendors Sales Locations

♦ ABLE Communications

17891 Cartwright Road
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USA

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♦ ACC Systems

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FAX: [1]301.574.2510

♦ Analogic Corporation

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18 Configuring Your DECstation

♦ Integral Serial I/O on the DS5000 Model 100 Series Workstation

The serial controller on the DS 5000/100 Series supports four RS-232 lines: two for the keyboard and mouse, and two communications ports. The I/O control ASIC supports DMA transactions for the two communication ports. The two serial lines for the LK401 or LK201 keyboard and 3-button mouse are supported through a single, RS-232, 15-pin DSUB connector. The keyboard and mouse both connect to a single cable that, in turn, plugs into the asynchronous serial port. Optional support for a tablet is provided in place of the mouse. The two asynchronous serial ports with 25-pin, RS-232 DSUB connectors can be used for printer or full modem communications. The hardware already supports synchronous communications through these ports. RS-232 support is also provided for 3D dial-box and button-box input. The 3D dial box has eight dials in a 2 x 4 matrix and the button box has 32 programmable buttons. Both are simultaneously supported through a single control box that connects to an RS-232 port.

♦ Integral Serial I/O on the DS5000 Model 200 Workstation

The DS5000/200 has three serial RS232 ports, all controlled by a single I/O controller on the TURBOchannel. The LK201 Keyboard and 3-button mouse are supported by a single 15-pin RS232 DSUB connector. The keyboard and mouse both connect to a single cable that, in turn, plugs into the asynchronous serial port. Optional support for a tablet is provided in place of the mouse. There are two asynchrounous serial ports with 25-pin RS232 DSUB connectors, which can be used for printer or modem communications. RS232-support is also provided for 3D input from a dial=box or button-box. The 3D dial box has eight dials in a 2 x 4 matrix and the button box has 32 programmable buttons. Both are simultaneously supported through a single control box that connects to an RS-232 port.

♦ Personal Workstation

DS5000/100 Series

To connect a DS5000/100 Series workstation to a ThinWire Ethernet network, a Digital ThinWire Ethernet Station Adapter (DESTA), a ThinWire Ethernet T-connector, a ThinWire Ethernet terminator, and a ThickWire-to-DESTA transceiver cable are used. To connect the DS5000/100 Series to twisted pair, a commercially-available twisted-pair-to-ThickWire adapter may be used. (Please see Allied Telesis and MiLAN Technology listings in this catalog).