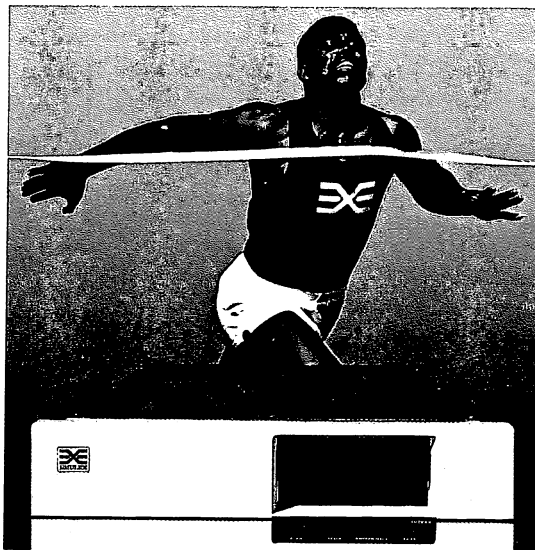




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MEDLEY

A DEC-COMPATIBLE WINCHESTER/CARTRIDGE TAPE SUBSYSTEM



**EMULEX HITS THE TAPE
A STEP AHEAD OF THE COMPETITION!**



EMULEX MEDLEY

INTRODUCING THE MEDLEY...

an innovative product that includes a 5 $\frac{1}{4}$ " Winchester, and a 1/4-inch cartridge tape drive for storage and backup, together in a single, compact package!

It gives you up to 110 megabytes of formatted disk storage with up to 70 megabytes of streaming tape backup. The Medley is fully software transparent to the operating system and diagnostic software of DEC QBus — including the new DEC MICRO/PDP-11 — and Unibus CPUs. And it uses the powerful and versatile Small Computer System Interface (SCSI) which keeps your options open for peripheral expansion.

EMULEX — PROVEN AS THE GENUINE ALTERNATIVE...

provides you with your own set of alternatives for purchasing the Medley.

1 MODEL ES2/110-S... A COMPLETE PACKAGED APPROACH

THE EMULEX MEDLEY PACKAGED SUBSYSTEM gives you the advantages of incorporating up to 110 MBytes of formatted disk storage and up to 70 MBytes (depending on block size and re-command time) of tape backup in a single, compact cabinet. The Medley combines a high performance 5 $\frac{1}{4}$ " Winchester disk drive with the CDC Sentinel cartridge tape drive.

THE MEDLEY SUBSYSTEM CHASSIS houses the storage media (both disk and tape), the disk controller, and a power supply within a 5 $\frac{1}{4}$ " high x 22" deep x 19" wide RETMA rack-mounted cabinet or optional desktop unit, with integral cooling fans. Enclosure and peripherals are fully FCC Class A certified, and are designed for UL or CSA equivalent approval.

THE EMULEX UC02 AND UC12 EMULATING HOST ADAPTERS are designed specifically to integrate medium to large Winchester drives to the QBus and Unibus, respectively, acting as an intelligent interface between the SCSI Bus to the subsystem and the QBus at the CPU. Physically, the UC02 is a single, quad-wide circuit board that plugs directly into a standard QBus slot of the LSI-11 through 11/23 PLUS and MICRO/PDP-11 systems. Full 22-bit addressing provides full 4 MByte capacity for the LSI-11/23 PLUS. The UC12 is a hex-

sized pcb that plugs into a Unibus slot of PDP-11 and VAX-11 CPUs. With either, self-test diagnostics are a part of every start-up operation.

THE EMULEX TC05 AND TC15 TAPE COUPLERS provide DEC TS11 software transparency and standard operating system support on the QBus and Unibus. Packaged on single quad boards which plug into any standard QBus or Unibus SPC slot, the TC05 and TC15 provide full 16-bit word DMA data transfers, and contain a large data buffer which provides efficient tape operation while functioning with standard DEC software. The TC05 implements full 22-bit addressing to utilize the 4 megabyte memory capacity of the LSI-11/23 PLUS. Both couplers interface to the CDC Sentinel 1/4-inch tape streamer, which incorporates an integral formatter, providing high capacity and high reliability.

The TC05 and TC15 incorporate the same modern bipolar microprocessor technology first introduced by Emulex, then perfected and proven in many thousands of units already shipped. Use of this technology results in a product line with full flexibility, optimum packaging, outstanding reliability, extra features, and high performance.

MEDLEY SUBSYSTEM PACKAGE ALTERNATIVES:

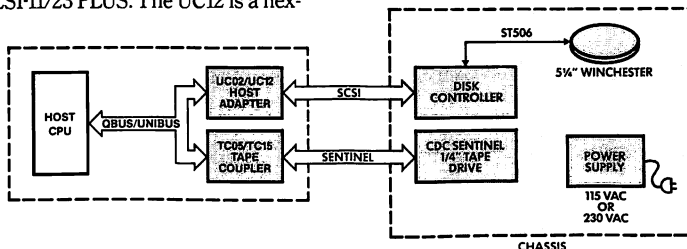
The Medley subsystem package is available in a number of component/configuration options to satisfy a variety of OEM, Distributor, and End-User applications.

2 MODEL UC02/UC12... THE EMULATING HOST ADAPTERS

Host Adapters for OEM's and Systems Houses requiring a single-board, intelligent interface for connecting their SCSI-based storage peripherals to QBus and Unibus based CPUs.

3 MODEL TC05/TC15... THE TAPE COUPLERS

Tape couplers for OEM's and Systems Houses requiring a low-cost emulation of DEC TS11 subsystem for 1/4-inch streaming tape backup.



MEDLEY PACKAGED SUBSYSTEM (MODEL ES2/110-S)

4 MODEL ES2/110...THE MEDLEY CHASSIS WITH 5 1/4" WINCHESTER DISK (INCLUDES UC02/UC12, DISK CONTROLLER, AND CHASSIS POWER SUPPLY)

This component package offers enhanced expansion or replacement storage for standard disk systems. Provides 110 MBytes of storage in a compact and high-performance package. The ideal hardware set for OEM's, Distributors, or volume End-Users wanting to incorporate their tape cartridge into a compact rack-mount subsystem package.

5 MODEL ES2/S...THE MEDLEY CHASSIS WITH CDC SENTINEL 1/4-INCH TAPE (INCLUDES TC05/TC15 AND INTEGRAL CHASSIS POWER SUPPLY)

This component package is ideal for upgrading an existing tape system. It provides up to 70 MBytes of backup, depending on block size and re-command time, in a compact, high-performance package, with the advantages of removable cartridge media. Presents a compact chassis enclosure for OEM's and Distributors wanting to add their own 5 1/4" Winchester drive, and controller, for a marketable disk/tape system.

OTHER MICRO-PRODUCTS FROM EMULEX.

Emulex now offers you a variety of Genuine Alternatives for your microcomputer applications. Our new line of disk, tape, and packaged subsystem products offers the same high quality and performance the computer world has come to expect from Emulex.

Emulex currently offers three micro-controllers: the *Titleist*, *Medalist*, and *Champion*. The *Titleist* is a high-performance 1/4" tape controller which interfaces to the Small Computer System Interface (SCSI) the compact Cipher 540 Streaming Cartridge Tape Drive. The *Medalist* disk controller provides the interface between the SCSI bus and standard ST506

interface 5 1/4" Winchester disk drives. The *Champion* disk controller interfaces the SCSI and the Enhanced Small Disk Interface (ESDI) 5 1/4" disk drives.

In addition to the basic stand-alone controller products, Emulex also offers complete disk and tape packaged subsystems for micro applications. The *Vault* is a tape subsystem built around the CDC 92192 Sentinel and the Emulex TC05/TC15 tape coupler. The *Vault* provides DEC TS11 emulation for your QBus or Unibus and up to 70 MBytes of storage (at maximum block size).

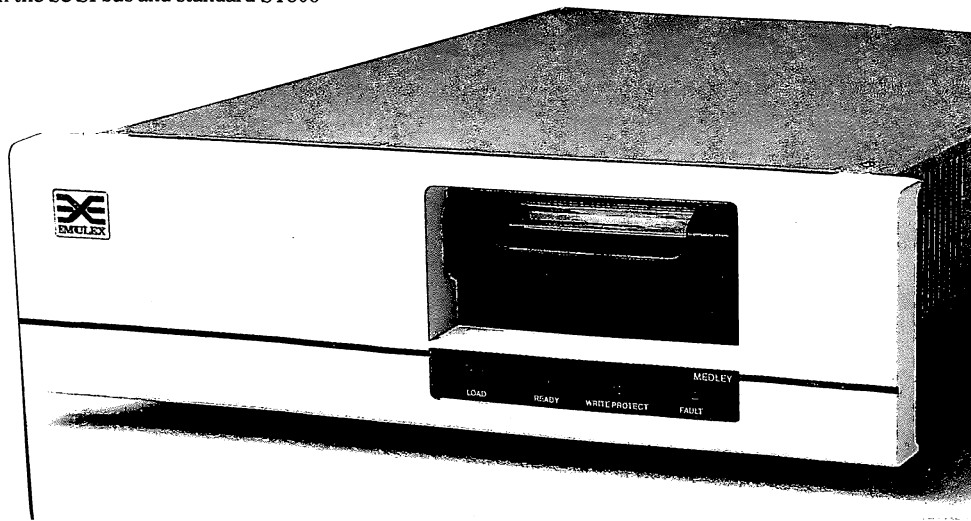
The *SABRE* is a disk subsystem which provides 31.2 MBytes of storage on a 5 1/4" Winchester disk and 10.4 MBytes of backup on a removable 8" cartridge disk. The *SABRE* package includes the Emulex UC01 host adapter and emulates 4 DEC RL02's on your LSI-11 through 11/23 PLUS CPUs.

Look for other new micro-controllers and subsystems to be announced soon!

WE OFFER MORE THAN JUST GREAT PRODUCTS.

You get superb quality and excellent support from Emulex with the Medley packaged subsystem or any of the above component/configuration options. All pcb components are pre-aged for at least 160 hours, and final pcb assemblies are environmentally cycled for at least 96 hours (while operating).

The Medley packaged subsystem is fully system tested for two hours, to ensure ultimate reliability from the moment it is installed. Plant production capability exists to meet the highest of volume requirements. All Emulex products are backed by a full one year warranty and supported worldwide by the company's technical applications group.



PRODUCT SPECIFICATIONS EMULEX MEDLEY TAPE SUBSYSTEM

The following specifications apply to the Medley packaged subsystem chassis:

| Characteristic | Specification |
|----------------|---|
| Dimensions | 5.25 inches (13.34cm) High 19.00 inches (48.26cm) Wide 22.00 inches (55.88cm) Deep |
| Weight | Approximately 48 lbs. (Depending on configuration.) |
| Power Supply | Input: 115 VAC \pm 10%, 60 Hz or 230 VAC \pm 10%, 50 Hz Output: + 12 VDC, \pm 5% - 12 VDC, \pm 5% + 5 VDC, \pm 5% |

The following specifications apply to the UC02/UC12 Emulating Host Adapters:

| | |
|---------------------|---|
| Design | Microprocessor-based emulating host adapter for integration of mass storage devices to QBus/Unibus host computer. |
| Computer Interface | UC02: Standard QBus. UC12: Standard Unibus. |
| Subsystem Interface | SCSI (ANSI X3T9.2 specification). |
| Emulation | Mass Storage Control Protocol (MSCP). |
| Bus Address Range | UC02: 0-4 MBytes. UC12: 0-128 K Words. |
| Priority Level | Level 5. |
| Status Display | Edge-mounted LED for activity/error/status display under microprogram control. |
| Option Switches | On-board slide switches for selection of program-controlled operating/configuration options. |

The following specifications apply to the Winchester disk drive:

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|------------------|-----------------------|
| Storage Capacity | 110 MBytes formatted. |
| Seek Time | 30msec. (average). |

The following specifications apply to the EMULEX TC05/TC15 Tape Couplers:

| | |
|--------------------|---|
| Standard Emulation | DEC TS11 Tape Subsystem. |
| Cabling | Single 40-conductor round cable between embedded tape coupler and tape transport. Maximum 10 foot cable length. |

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CDC and Sentinel are trademarks of Control Data Corporation.

| Characteristic | Specification |
|----------------|--|
| Software | LSI-11/PDP-11 Diagnostics: TS11 Controller Logic Test — ZTSIBO (patched). TS11 Data Reliability Test — ZTSHCO. VAX-11 Diagnostics: TS11 Subsystem Repair — EVMAD (patched). TS11 Data Reliability Test — EVMAA. |

Operating Systems:
Transparent to all software applicable to TS11 tape system on LSI/PDP/VAX-11. Includes RT11, RSX11M, RSX11M-PLUS, and RSTS-E, and VMS.

| | |
|--------------------------------|---|
| Data Buffering | 3.5 KBytes. |
| Bus Address Range | 0-256 KBytes standard (0-4 MBytes optional for LSI-11/23-PLUS). |
| Standard Register Base Address | Variable. |
| Standard Interrupt Vector | Variable. |
| Interrupt Level | BR5. |
| Self-Test | Coupler automatically executes extensive power up self-test. |
| Fault/Activity Display | LED indicates detected board fault and coupler read/write activity. |
| Option/Configuration Switches | Three on-board slide switch modules for Base Address and Interrupt Vector. |
| Packaging | Quad-size four layer board. |
| Computer Interface | Standard QBus or Unibus using DEC approved drivers and receivers; one unit load per bus line. |
| Power | +5 volts \pm 5%, 6 amps. |

The following specifications apply to the Control Data 92192 Sentinel 1/4-inch Tape Drive:

| | |
|----------------------------------|---|
| Transport Interface | Standard CDC Sentinel tape drive formatter interface. |
| Tape Media | 1/4-inch, 600-foot data cartridge. |
| Tape Speed | 55 ips. |
| Tape Density (Forward & Reverse) | 8000 bpi. |
| Recording Mode | Serial recording in NRZI format. |
| Track Configuration | Sequential, serpentine track recording per ANSI X3.55-1977. |



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