

Model PM2021/x Series



SmartCache III Low Cost SCSI-2 Adapter with RAID Add-On Option



DESCRIPTION

The DPT SmartCache III SCSI adapters provide a logical “grow-as-you-go” plan that allows you to start with the SCSI adapter, then add caching and RAID capabilities when you need them. The SmartCache III adapters include low-cost ISA and PCI models which utilize a 68000 processor for intelligent I/O processing. The High-Performance PCI models triple the power with a 68020 microprocessor. This on-board intelligence reduces CPU overhead and permits the adapter to manage advanced I/O functions.

Add easy to install modules to convert the base adapter to caching and RAID. Only SmartCache II provides a low-cost, logical growth path that lets you go from SCSI adapter, to caching controller, to RAID controller - all at a pace that meets your changing needs and schedule.

The model numbers have several different suffixes on the end of the number. The number /95 indicates that the SmartCache III card includes a floppy disk controller that supports two floppy drives. The models with a /90 do not have the floppy controller on board. The /W indicates the controller support Wide SCSI.

The Model PM2021/x Low-Cost SCSI Adapters are designed to provide high performance in environments where low cost is essential. These adapters provide on-board intelligence, utilizing a 68000 microprocessor. The PM2021 adapters are ISA bus cards that operate in a 16-bit bus slot in any x286, 386, 486 or Pentium PC/AT compatible computer. All CPU clock speeds are supported. The PM2021 may be installed in 16-bit or 32-bit slots in EISA computers as well, however, only 16-bit ISA bus mastering transfers will be supported.

FEATURES

- **Operating System Support for Windows NT, DOS, SCO Unix, Novell NetWare & Others**
- **Supports Up To 7 SCSI-1 & Fast SCSI-2 Devices Including Hard Drives, Tape, Floptical, WORM, CD-ROM, MO Drives & Scanners**
- **Hardware Scatter/Gather Support for Top Performance in Virtual Memory Environments**
- **Overlapped I/O and Tagged Command Queuing, for Highest Performance with SCSI-2 Drives**

The PM2124 High-Performance SCSI Adapters are designed to provide top levels of performance required by today's multiuser operating systems and file servers. An on-board high-speed 68020 microprocessor provides the intelligence for heavy I/O processing loads required by larger computer systems. These adapters operate in a 32-bit PCI bus mastering slot in any 386, 486, or Pentium computer.

Caching Module

With the optional CM4000 Caching Module, SmartCache III SCSI adapters upgrade to full-featured caching controllers, capable of driving your applications up to 5 times faster. The hardware caching technology is designed to be a powerful complement to software caching, such as that found in Novell and Unix. The Caching Module plugs directly onto any of the SmartCache III adapters and configures automatically. There are no jumper settings or software changes necessary.

How much cache is required for best performance? Every system is different, but as a general rule of thumb, 4MB of hardware cache is sufficient for most workstations and applications. 1MB of cache is recommended for every 2 to 4 users in a network or multiuser system. Typically, the more cache, the faster a system runs.

DESCRIPTION CONT.

SIMMs

The SmartCache III Caching Module accepts either standard or ECC SIMMs. The user can install up to four standard 36-bit single-sided, low-profile SIMMs. 1, 4 or 16MB SIMMs may be combined to provide up to 64MB of hardware cache in a single host slot.

The SM4000, 4MB and 16MB ECC SIMMs will detect and correct data errors in cache and in the controller data path, insuring data integrity for critical applications.

Disk Array Module

The user can easily add RAID capabilities with the optional DM4000 Disk Array Module once the SmartCache III SCSI Adapter has been converted to caching. With the array module, SmartCache III can configure SCSI hard drives in any combination of RAID 0, 1, and 5 arrays, providing optimum subsystem performance and fault tolerance. Advanced features include "Hot Spare" capability to automatically reconstruct data onto a spare drive upon drive failure. DPT's "Dual-Level" RAID permits virtually unlimited numbers of hard drives and host adapters to be combined into one or more arrays.

SPECIFICATIONS

(PM2124)

Host Interface

32-bit PCI

On-Board CPU

68020/20MHz

Max Host Transfer Rate

312MB/sec

SCSI Bus

PM2124/90: 8-bit single-ended, active termination
PM2124/W: 16-bit Wide single-ended, active termination

SCSI Interface

SCSI-1, SCSI-2, Fast-SCSI
Scatter/Gather, Command Queuing, Disconnect/
Reconnect

Max SCSI Transfer Rates

2MB/sec Asynchronous
5MB/sec Synchronous
10MB/sec Fast Synchronous

Internal Port

50-pin low-density
50-pin high-density

Power Requirements

PM2021: +5VDC @ 0.85A typ.
PM2124: +5VDC @ 1.02A typ.
CM4000: +5VDC @ 1.25A typ (4 SIMMs)
DM4000: +5VDC @ 0.05A typ.

Operating Temperature Range

0° to 50°C

Humidity

10% to 90% RHNC

Altitude

10,000 feet (3,000m)

ORDERING GUIDE

CONTROLLERS

Model PM2021/90

SCSI-2 controller, ISA bus, no floppy

Model PM2021/95

SCSI-2 and dual floppy controller, ISA bus

Model PM2124/90

PCI bus Fast SCSI-2 controller, no floppy

Model PM2124/W

PCI bus Wide SCSI controller, no floppy

ACCESSORIES

Model CM4000

Caching memory option card, 0k RAM
Accepts standard 36-bit, 72-pin SIMMs (PS/2 style), any capacity 80ns or faster, low profile, single sided. Also accepts proprietary ECC SIMMs listed below.

Model DM4000

RAID module option. Requires CM4000 with a minimum of 1MB (4MB recommended)

Model SM4000/4

4MB ECC SIMM for CM4000, install up to 4

Model SM4000/16

16MB ECC SIMM for CM4000, install up to 4

