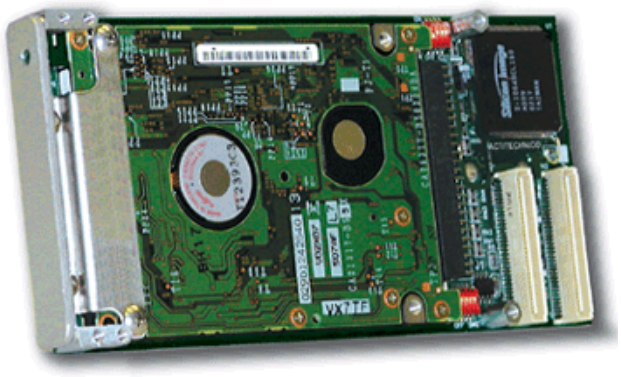
PMCDisk

Embedded Mass Storage

The PMCDisk is intended to be a boot device and/or a data storage device for embedded computing systems which utilize the PMC form factor.

PMCDisk Features:

- ATA/IDE mass storage solution implemented using the industry standard PMC form factor (IEEE P1386.1)
- Can be used on any Single Board Computer with a PMC slot
- Uses a 9.5 mm high 2½" ATA/IDE hard disk or a solid state 2½" IDE Flash disk
- ATA disks available in Enhanced Duty cycle versions for NEBS Level 3 7/24 requirements
- 3.3 V power not required; 5V tolerant signaling
- Supports several operating systems including Solaris, VxWorks, Linux, and Windows
- Open Boot Module supported to allow the PMCDisk to boot on any PCI-compliant SPARC platform



PMCDisk Module 9260 with Rotating Disk

Benefits:

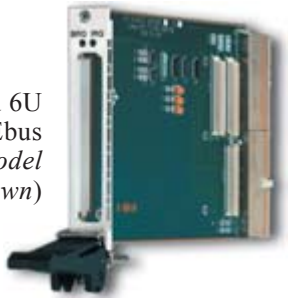
- Designed for use with Single Board Computers and Blades
- Replaces external hard drives or Disk Modules that require external fixtures or system slots
- Solves the embedded designer's requirement for cost effective mass storage, eliminating cables and the need to use SCSI based storage solutions for applications requiring moderate storage capacities
- Complete solution, with drive, interface and software driver provided
- Ideal for environments where enhanced duty cycles are required, i.e. GR-1089 NEBS Level 3 core standard (Short Term Temp. & Earthquake shock)
- Compatible and tested with Solaris 9.0; also available with VxWorks, Linux and Windows
- Available with a choice of drives: 40 GB, 60 GB or 80GB 2½" ATA hard disk; up to 32 GB 2½" IDE Flash drive

Rugged PMCDisk versions also available:

- Solid State
- Enhanced Shock
- Extended Temperature

Adapters and SBCs can also be ruggedized

Available with 3U and 6U CPCI or 6U VMEbus Adapters (*cPCI Model 7000 shown*)



Embedded Systems By Design

1-800-445-6194 • www.acttechnico.com

ACT/Technico • One Ivybrook Blvd., Suite 180 • Ivyland, PA 18974 • Tel: (215) 957-9102 • Fax: (215) 957-9074

Specifications

The PMCDisk consists of a printed circuit board, a PCI to ATA/IDE controller, various support circuitry and components, connectors, and a 2½" ATA/IDE hard disk drive.

Physical Characteristics

- Standard PMC form factor, single wide per IEEE 1386.1
- Supports 2½" ATA hard disk form factor; uses only 9.5mm high drives
- Universal Voltage Keying holes (2 for 3.3V & 5V)
- Gasketed front panel with green LED drive activity indicator

Compatibility

- May be used on any board supporting standard PMC sites such as CompactPCI and VMEbus SBCs
- IEEE 1386 Core Family Draft Standard Common Mezzanine
- PCI Local Bus v. 2.1
- PICMG cPCI Spec 2.0 R3 and PICMG PTMC Spec 2.15
- See Manual for all related specifications
- **Software:** Solaris, VxWorks, Linux and Windows

Interface

Ultra ATA/100, ATA-5 compliant

Electrical Specifications

- ATA controller uses Silicon Image SIL0649CL160
- On-board 512Kb flash device to store on-board BIOS or open boot modules
- Universal signaling and operates at 3.3 volts, tolerating 5 volt I/O
- Vital Product Data included in expansion Flash
- Supports IPMB accessed serial ROM for FRU identification

Environmental Specifications (card)

- DC Input Voltage: 5V ±5% @ .75A typical
- Operating Temperature: 5°C to 70°C (see disk tables)
- Storage Temperature: -25°C to 85°C (see disk tables)
- Operating Humidity: 8% to 90%
- Non-operating: 8% to 95%
- Shock & Vibration: (see disk tables)

SIL0649CL160 ATA Disk Controller Specifications

- ATA-100 Compatible
- PIO Modes 0,1,2,3,4
- Ultra 33, 66, 100 Compatible
- Supports Bus Master DMA at 133 MB/sec
- 133 MB/sec Burst Rate
- 48-bit sector addressing
- Compatible with Microsoft ATA drivers
- Compliant with PCI 2.1 and ATA - 5
- 3.3V operating voltage with 5V tolerant I/O

Disk Parameters/Specifications

The following parameters are common to all drives:

Average Seek Time: 12 ms
Track to Track: 1.5 ms
Average Latency: 7.7 ms
Dimensions (in mm): 9.5 H x 70 W x 100 D
Weight (gms/oz)**:** 99 / 3.49

Power Requirements: 3.3V @ 250 ma (*rotating disk only*)
5V @ 5W peak, 2.5 W Read/Write
Humidity (non condensing RH)
Operating: 8% to 90%
Non-Operating: 5% to 95%
Altitude
Operating: -1,000 to 10,000 ft
Non-Operating: -1,000 to 40,000 ft
MTBF (hours) 500,000 +

Rotating Disk Specifications

Drive Sizes in GB	40/60/80
Rotational Speed (rpm)	4,200 (inquire about 5,400 & 7,200 options)
Interface Transfer Speed	100 MB/sec Ultra DMA Mode 5
Media (Read/Write)	19.4 to 38.1 MB/sec
Vibration Operating Non-Operating	 1 G (5 to 500 Hz) 5 Gs (5 to 500 Hz)
Shock (half sine) Operating Non-Operating	 225 Gs (2 ms); 15 Gs (11ms) 900 Gs (2 ms); 120 Gs (11 ms)
Temperature (in °C) Operating Non-Operating	 5 to 50, 55 Short Excursion per NEBS Level 3 -40 to +65
Standard Disk	5 to 55°C: Duty Cycle 20%
Enhanced Duty Disk	7 x 24 continuous, 50% Duty Cycle 5 to 40°C continuous
Acoustic Noise (typ.) Idle Seek	 24 dBA 31 dBA

Solid State Disk Specifications

Drive Sizes in GB	8, 16, 24, 32
Interface Transfer Speed (Sustained)	10 to 40 MB/sec Read 66 MB/sec Write
Media (Read/Write)	8.5 to 14 MB/sec
Vibration (min.)	16.3 Gs (20 to 2,000 Hz) on x,y,z axis
Shock (half sine)	1,500 Gs (MIL-STD-810F compliant)
Temperature (in °C) Operating Non-Operating	 -40 to +85 -55 to +95
Operating Altitude (max)	80,000 feet

Order Information

Build an assembly that fits your requirements. Use the following part number to create a PMCDisk module of your choice:

9260-*xxx*GB-AA

Specify drive size:
Standard & Enhanced ATA: 40/60/80 GB
Flash Drive ATA (Solid State): up to 32 GB

ED = Enhanced Duty
S = Solid State
X = Extended Temp
C = Conformal Coat

We offer a wide variety of configurations, and mass storage capacities are always changing. Call **800-445-6194** or visit our website for the most recent information.

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Printed in USA - PMCDisk-PDF-0605