Secure PMCStor

Write-Protect / Secure-Erase Embedded Mass Storage

The *Secure PMCStor* provides advanced levels of data security for sensitive applications in military and commercial environments. Write protection prevents unwanted erasure, overwrite, or modification of sensitive data and operating system information. The Secure-Erase mode enables rapid and thorough destruction of that data when required.

The Secure PMCStor provides two methods of data protection: Secure-Erase, with two levels of data purging; and Write-Protect, preventing data from being overwritten or modified. It couples a PCI/ATA core with secure-erase and write-protect logic implemented via a FPGA.

The Secure PMCStor is a fully integrated and tested storage solution capable of operating in environments where extended shock and vibration conditions exist. The media and the controller have been pre-qualified with major operating systems.

Secure PMCStor Features:

- Hardware initiated Secure-Erase feature offers two erasure levels: destructive or non-destructive

- Write-Protect feature is a function of the hardware and is enabled via an external signal or switch

- Provision for on-board BIOS for system boot directly from storage media

- Support for multiple storage vendors enables ideal selection for environmental performance

- Convection or conduction cooled; uses industrial temperature range components (-40°C to +85°C operating); conformal coating available where required

- Complete solution includes storage, PMC and software. Each assembled unit is configured and undergoes functional testing to confirm reliable operation of the entire unit before shipment

Secure PMCStor

Benefits:

- Means of securing media from unauthorized write or erasure of data where it's most needed

- Hardware initiated write protection and secure erasure helps prevent unintended intervention, since no OS is required for implementation

- Cost effective mass storage, eliminating cables and the need to use SCSI based storage solutions for applications requiring moderate storage capacities

- Solves rugged embedded mass storage requirements

CompactFlash Media:

- Solid state storage capacity with rugged, enhanced duty CompactFlash drives

- Up to 8 GB CF-I (*16 GB CF-II - see note p. 2*) (consult factory as capacities regularly increase)

- Extended operating temperature (-40°C to +85°C)

With bootable device drivers for **Linux and VxWorks**, the *Secure PMCStor* is an ideal embedded solution for secure storage requirements.

Embedded COTS By Design

I/O

Software

Design & Documentation

Chassis

Switches

SBC

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Specifications

Compatibility

Compliant with PCI Local Bus (v. 2.3), The Secure PMCStor supports 3.3 VIO signaling and mounts to boards that provide PMC sites designed to IEEE P1386.1. The disk controller is ATA-2 compliant. The Secure PMCStor is RoHS compliant. The assembly is available with conformal coating, applied in accordance with MIL-I-46508, Type UR.

Designed for operation on conduction cooled single board computer platforms per the VITA 20 specification. Heat conduction areas are provided at the center and front of the board, as well as at the upper and lower edge of the board. The Secure PMCStor may be used on any board supporting standard PMC sites such as CompactPCI and VMEbus Single Board Computers, as well as expansion adapters.

Software compatibility: VxWorks, Linux, and Windows. Please inquire about other operating systems.

CompactFlash I and II Note

The CompactFlash II minimally exceeds the component height limit in the IEEE 1386.1 specification by 1.3 mm including retaining bracket. This is not typically an issue for the vast majority of boards.

Interface

Typically, no cabling is required to use the Secure PMCStor since the drive is on-board. The data security feature can be initiated via a toggle switch for Write-Protect, a push-button for Secure-Erase, or via the Pn4 rear-I/O connector. Write-Protect can also be enabled via an on-board DIP switch.

Environmental Specifications

	Secure PMCStor Assembly with 1 On-Board CF-I Drive
Transfer Rates (Max):	**NOTE: Rates vary greatly dependent on selection of processor, CF, and OS**
Read/Write:	2.0 to 7.0 MB/s
Weight (w/1 CF-I)	2.7 oz. (68.6 gm)
DC Input Voltage	5V ±5% @ .2A typical
Temperature (in °C) Operating: Non-operating:	-40 to +85 -50 to +95
Humidity - Uncoated Operating: Non-operating:	5% to 95% non-condensing 5% to 95% non-condensing
Humidity - Coated Operating: Non-operating:	5% to 100% non-condensing 5% to 100% condensing
Vibration Oper. and Non-Oper:	2 G @ 15 to 2,000 Hz sinusoidal input
Shock Operating: Non-operating:	40 Gs half sine, 11 msec duration 60 Gs half sine, 11 msec duration
MTBF (std ambient t = 30°C)	645,079 hours (tested to MIL-STD-217 Ground Benign; assumes 4 million hours CF MTBF)

CompactFlash Card Capacities

Capacities and manufacturer specifications are continually changing and improving. Please consult factory for the most current information.

	Industrial CompactFlash
Capacity - Type I	1, 2, 4, 8* GB
Type II	8, 16* GB *(*early 2007)*

IDE/ATA Controller Specifications

- ATA-2 Channel implemented via on-board FPGA
- Independent DMA channel with 8K FIFO
- Supports single- and multi-word DMA transfers
- MDMA Mode 0, 1, 2 and PIO modes 0,1,2,3, and 4
- 32-bit 33MHz PCI interface
- Compatible with Microsoft IDE/ATA drivers
- Compliant with PCI 2.3
- 3.3 VIO signaling (not 5V tolerant)
- 2 CF slots support type I and II, 3.3V powered
- Front panel CF slot capable of hot swap
- Hardware initiated Secure-Erase (for supported CompactFlash card vendors only)
- Hardware enforced Write-Protect

Secure PMCStor Order Information

Use the following part numbers to create your Secure PMCStor module. Custom Write-Protect configurations are available; contact factory for details.

9247-aaTx-B-C-DD: Convection cooled, front panel

9248-aaTx-B-DD: Conduction cooled, no front panel

aa: CompactFlash Capacity
see capacities below

Tx: CompactFlash Type
1 CF-I
2 CF-II

B: Coating Type
S Standard, no coating (*default*)
C Conformal coating

C: Front Panel Switch/Button
T Toggle switch for Write-Protect
P Push button for Secure-Erase
B Both
N = No front panel switches

DD: WP Write-Protect only
WS Write-Protect and Secure-Erase

Examples:

9247-16T2-N-T-WP
Convection cooled Secure PMCStor with 16 GB CF-II with toggle switch and Write-Protect options

9248-8T1-C-WS
Conduction Cooled Secure PMCStor with 8 GB CF-I, conformal coating; Secure-Erase & Write-Protect options

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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