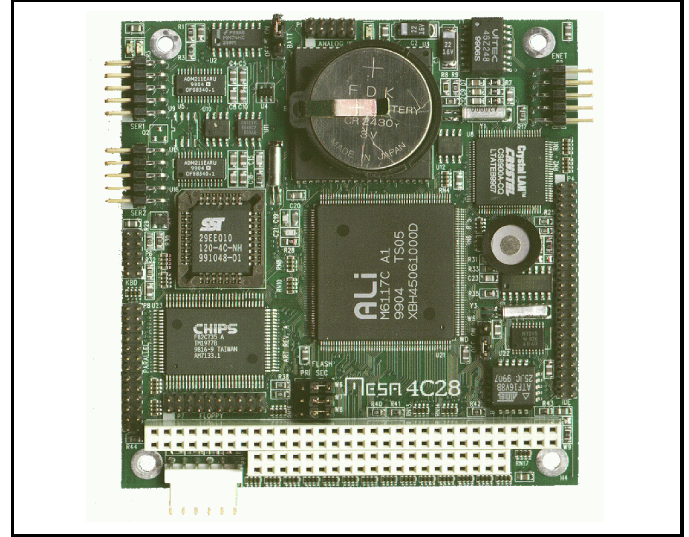




## FEATURES:

- Low cost / High integration CPU
- 4 or 8M bytes system RAM
- 8 to 64M IDE flash disk on card
- 10BaseT Ethernet interface
- IDE and floppy interface
- Two FIFOed RS-232 serial ports
- Bidirectional parallel port
- 8 Input 12 bit A-D
- EEPROM configuration storage
- Battery backed clock/calendar



The 4C28 is a high integration, low power, all CMOS, AT compatible CPU implemented on the PC/104 bus. With the built-in ethernet interface, the 4C28 is ideally suited to network accessible systems such as embedded web servers.

The 4C28 has a 40 MHz 386SX compatible CPU/chipset. System RAM can be 4 or 8M bytes depending on model. Flash disk can be 8, 16, 32 or 64M bytes.

The flash disk is a standard IDE device and does not require special drivers like some other flash drive systems. The flash controller has ECC and wear leveling. When combined with the inherent long life of the NAND flash devices used, a very long write cycle life is provided.

A precision reset circuit, watchdog timer, EEPROM setup storage, Ethernet interface, and built in disk emulator make the 4C28 especially suited to embedded applications.

The 4C28 BIOS EPROM uses flash memory to allow field upgrades without physical access to the 4C28 card. The BIOS can be configured to skip various device probes at startup, allowing a fast boot-up in embedded applications.

The 4C28 BIOS is normally 128K bytes but can be extended to 256K bytes to accommodate Datalight ROM-DOS or other built in operating systems. Datalight ROM-DOS is available as a 4C28 option.

On card 4C28 I/O includes two 16C550 type RS-232 serial ports, a bi-directional parallel port, a floppy interface, an IDE interface, and a high performance CS8900 based 10BaseT ethernet interface, and a 8 input 12 bit A-D. The second serial port can optionally be configured for an RS-485 interface.

All standard AT logic is provided by the 4C28, including 2 interrupt controllers, 2 DMA controllers, keyboard controller, and battery backed clock.

Configuration storage is provided by an EEPROM, which is much more resistant to inadvertent corruption than the battery backed CMOS configuration storage in a standard AT.

4C28 power consumption is 3W maximum with CPU running and down to .5 W with CPU stopped.

The RS-232 interface power is generated on card, so only +5V power is required by the 4C28.

**RAM OPTIONS:** The standard 4C28 RAM options are 4M and 8M of system RAM.

**EEPROM SETUP STORAGE:** AT setup information plus several 4C28 specific options are stored in an on-card EEPROM. The AT setup information is copied to the CMOS setup RAM at power up, allowing all software that accesses the CMOS RAM directly to operate normally. EEPROM setup is much more reliable than the battery backed CMOS setup storage normally used, and allows the 4C28 to be used where lithium cells are not allowed.

**CONSOLE REROUTING:** The 4C28 BIOS supports console re-routing for applications not using a standard keyboard or video card. Console out can be directed to either serial port, or be stubbed.

**DISK EMULATOR:** an card NAND flash devices allows disk capacities of 8M through 64M byte.

**ETHERNET INTERFACE:** High performance 16 bit CS8900 based 10BaseT Ethernet. Panel mount RJ45 paddle board supplied with 4C28.

**A-D:** 8 input 12 bit A-D with 3.75V full scale. Reference voltage available on A-D input connector.

**LINUX/NETBSD:** Minmal Linux and NetBSD distributions are provided. These small distributions fit easily on a 16M flash drive and include Ethernet and A-D drivers, a small web server, telnet and FTP demons , smtp server and a simple editor.

**ROM-DOS OPTION:** The 4C28 can be provided with Datalight ROM-DOS as an option. This is a DOS compatible operating system that is built into the 4C28 BIOS ROM.

**SOCKETS OPTION:** Datalight Sockets option can be provided for TCPIP connectivity in a DOS environment.

**UTILITY SOFTWARE:** Many utility programs are provided with the 4C28 to facilitate embedded system development. These programs include a serial file down load utility for transferring files to a floppy-less system, and a flash BIOS writer,

**CLOCK CALENDAR:** Battery backed clock calendar with on card Lithium cell. Lithium cell lifetime is 5 years minimum with power off.

**WATCHDOG TIMER:** 1 second timeout watchdog timer for unattended applications. Normally cleared by BIOS tic interrupt service routine, but can be left as task for application programs. Can be disabled for non-DOS operating systems.

**FLASH BIOS:** The 4C28 is supplied with a flash BIOS. This allows BIOS and ROM-DOS upgrades without access to the 4C28 card.

**RIPL:** (Remote Initial Program Load) A built-in BIOS function, allows simple test, start-up, and initialization programs to be down loaded to the 4C28 over the serial port at start-up.

## 4C28 SPECIFICATIONS:

	Min	Max	Units	Notes
<b>POWER REQUIREMENTS:</b>				
Supply voltage	4.75	5.25	V	
Supply current (full speed)	----	600	mA	
Supply current (CPU stopped)	----	125	mA	No Ethernet
<b>ENVIRONMENTAL:</b>				
Temperature range -C version	0	+70	°C	
Temperature range -I version	-40	+85	°C	
Relative humidity	0	90	Percent	Non-Condensing

## ORDERING INFORMATION:

4C28-R4M 4M base RAM                      4C28-R8M 8M base RAM

Add -F8M to specify 8M flash, -F16M for 16M flash and -F32 to specify 32M flash option

Add -Ether to specify Ethernet option

Add -I to specify industrial temperature range