

MemCard™ (MMB)

I/O Board

Low-cost interface board supports PCMCIA, 24-bit ADC, Ethernet 10Base-T



Features:

- 3.6x2.3x0.7"
- -40°C to +85°C
- Power consumption: < 20mA at 5V
- Power input: regulated 5V or +8.5V w/ on-board linear regulator *
- 68-pin PCMCIA ATA Flash cards up to 1GB *
- Up to 6 ch. of 24-bit ADCs (LTC2400) *
- 2.5V reference, temperature sensor *
- Up to 33 ch. 12-bit ADC (P2543) *
- RS-232 drivers and 5V regulator*
- 10 BASE-T Ethernet interface (CS8900), RJ45 *
- Installs on A104, AE, AE-P, AC86, AE86, AE86P, BB-A, ID, IE, IE-P, IE-M, SL, VE, or 586E

*optional

The **MemCard™ (MMB)** provides a variety of functionalities to expand upon the basic capabilities offered by other TERN controllers. It supports PCMCIA ATA-type flash memory cards, 24-bit and 12-bit ADCs, and a 10BASE-T Ethernet interface.

The **MMB** can provide mass data storage via a 68-pin PCMCIA socket for portable embedded applications. PCMCIA cards eliminate the problems associated with electro-mechanical disk-based systems. The **MMB** supports PCMCIA ATA Flash memory cards of up to 1GB from SanDisk, M-Systems, or Simple Technology. With TERN's software support, you can access any of the sectors within the Flash card memory. An optional ejecting mechanism is also available.

Up to six 24-bit ADC (LTC2400) chips, each providing one channel of 0-2.5V analog inputs, can also be installed. The LTC2400 is a 24-bit analog-to-digital converter with an integrated oscillator. It uses delta-sigma technology, providing a typical conversion time of 160 ms. Up to three P2543 chips can be installed, providing a total of 33 12-bit ADC inputs. The P2543 is an 11-channel, 12-bit, switched-capacitor, successive-approximation, serial interface, analog-to-digital converter, with a sample rate of up to 10KHz while driven by a 40MHz A-Engine™.

The **MMB** uses a 2.5V precision reference (LT1019-2.5) for the 24-bit ADC. The LT1019 has a typical ultra-low temperature drift of

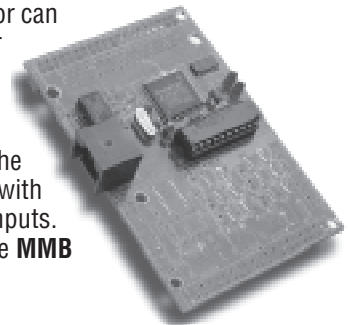
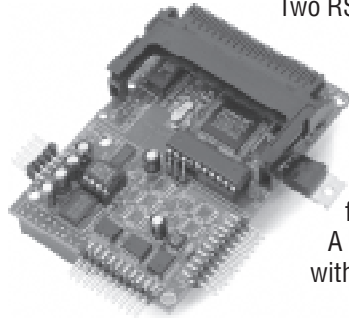
3ppm/°C and a built-in temperature sensor. For applications that use thermocouples, the LT1019 can be used to measure the board temperature or ambient temperature.

An Ethernet LAN Controller (CS8900, Crystal Semiconductor Corporation) can be installed on the **MMB**. The CS8900 includes on-chip RAM and 10BASE-T transmit and receive filters. The CS8900 directly interfaces to the TERN controller's data bus, providing high-speed, full duplex operation. A standard RJ45 8-pin connector can be installed for the Ethernet LAN connection. Due to mechanical constraints, the Ethernet RJ45 connector and the 68-pin PCMCIA socket cannot be installed at the same time on the **MMB**. A flat cable with an off-board RJ45 may be connected to the **MMB** while the PCMCIA socket is installed.

The CS8900 offers a broad range of performance features and configuration options. It can increase system efficiency and minimize CPU overhead in a 10BASE-T network. The **MMB** with CS8900 provides a true full-duplex Ethernet solution, incorporating all of the analog and digital circuitry needed for a low cost complete C/C++ programmable Ethernet node controller.

Two RS-232 drivers and a 5V regulator can be installed on-board. For applications that only require the 39 channels of 12-bit and 24-bit ADCs, users can interface to the **MMB** via a 5x2-pin header with five TTL outputs and two TTL inputs.

A sample program for driving the **MMB** with TTL I/Os is available.



Ordering Information

MMB **\$49/\$39/\$29/\$19** **Qty 1/100/1K/5K+**
NOT including add-on options. OEM option discounts available.
Controller is NOT included.

Add-on Options:

- 1) 68-pin PCMCIA socket with PAL \$30
- 2) Ejecting mechanism \$10
- 3) 24-bit ADC w/ 2.5V REF up to 6 \$20 each
- 4) 2.5V reference & temperature sensor (LT1019) \$15
- 5) 11 ch. 12-bit ADC (P2543) up to 3 \$30 each
- 6) RS-232 and 5V regulator \$15
- 7) Ethernet interface (CS8900) † \$50
- 8) PCMCIA ATA cards: 4MB to 1GB Call for pricing

NOTE: Controller J2 header must be Type E (see p. 26)

† If PCMCIA is installed, RJ45 must be off-board, connected via flat cable. See www.cogwheel.com for software.

Typical Order Example:

MMB™, PCMCIA socket, 24-bit ADC x2
 MMB + 1 + 3 (x2) = \$49 + \$30 + \$20x2 = \$119



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