



A104™

### Features and Options:

- 3.8x3.6x0.5 inches. -40°C to +80°C
- 16-bit CPU (188), 40 MHz
- Power consumption: 190 mA at 5V for 40 MHz
- Power saving mode: 30 mA at 5V for 40 MHz
- 512KB Flash/ROM, 512KB SRAM\*, 512 bytes serial EE
- PWM output, external interrupts, 3 16-bit timer/counters.
- Up to 3 RS-232 serial ports, or two RS-232 plus one RS-485
- 4 ch. 12-bit DAC(LTC1446), 11 ch. 12-bit ADC(LTC2543)\*
- Real-time clock RTC72423, lithium coin battery
- 64 pin 8-bit PC/104 compatible connector
- 5 ch. 24-bit ADC, programmable Gain Front End (AD7731)
- 14 solenoid drivers or protected 35V digital inputs.
- 24+ TTL I/O, support for LCD and keypad interface.
- Multifunctional 32 PIOs of CPU, 15+ I/O free to use.

\*optional

Measuring 3.55 by 3.78 by 0.5 inches, the **A104™** offers a complete C/C++ programmable computer system with a high performance CPU (188) operates at 40 MHz system clock speed with zero-wait-state. It features upto 512KB ROM/Flash, 512KB battery-backed SRAM, 512 bytes serial EE, a real-time clock, three 16-bit timers/counters and a watchdog timer. Two DMA driven CPU internal serial ports and a third SCC2691 UART support reliable serial communication up to 115,200 baud. On-board drivers support two RS-232 ports, and the UART can be either RS-232 or RS-485 (supports 8-bit or 9-bit multi-drop networking).

The 3 timers can be used to count or time external events (up to 10 MHz), or to generate non-repetitive or variable-duty-cycle waveforms as PWM outputs. Pulse Width Demodulation (PWD) can be used to measure the width of a signal in both its high and low phases. The CPU offers 32 multi-functional and programmable I/O pins, with 15+ available for user use.

### FEATURES

The A104 is unique in the wide array of supported hardware features integrated into a single unit. Digital, analog, and protected I/O are all available.

On board is a 82C55 I/O chip providing an additional 24 bi-directional I/O, of which 14 TTL user-definable I/O lines can be used to interface to a graphic- or character-type LCD and a keypad. An adjustable negative voltage (-10V) is on board for LCD contrast. Two 74HC259 chips on-board provide 16 TTL outputs. A total of 14 solenoid driver outputs can each sink 350 mA at 50V.

There are 11 channels of 12-bit analog inputs, with input range of single ended 0-5V(or 0 to REF), and a sample rate of up to 10 KHz. Two DAC chips on board support a total of four channels 12-bit, 0-4.095V analog voltage outputs (5 mA sink/source current.).

A high-resolution 24-bit Sigma-Delta ADC (AD7731, Analog Device) is available. It has 5 inputs with a programmable gain front end, which allows it to accept a range of low level transducer signals. At 800Hz-output rate, the achievable resolution is 16-bit, based on AD7731 data sheet.

A 64 pin 8-bit PC/104 connector can be installed. The A104 is not fully PC/104 compatible; signals are routed to the connector directly from the CPU with no buffering.

### Order Information

**A104 (40MHz)                      \$169/\$139/\$74                      Qty 1/100/1K+**

Includes: 188 40 MHz with 128KB SRAM, 2 RS232, 3 timers/2 PWM, 14 solenoid drivers, 50+ TTL I/Os watchdog timer, 512 byte EE, 5V regulator.

NOT including options. OEM option discounts are available.

### Add-on Options:

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|---|--------|
| 1) SRAM: 512KB .....                          | \$40   |
| 2) DEBUG ROM(AE_0_115) .....                  | \$30   |
| 3) Real-time clock(RTC) and battery .....     | \$20   |
| 4) UART(SCC2691) a) RS232 or b) RS485 .....   | \$30   |
| 5) 24-bit ADC (AD7731) .....                  | \$60   |
| 6) ADC(LTC2543) .....                         | \$30   |
| 7) DAC(LT1446), 2 chips .....                 | \$40x2 |
| 8) Precision reference, 20 PPM/°C, 2.5V. .... | \$15   |
| 9) LCD negative voltage pot .....             | \$10   |
| 10) PC104 64-pin connector .....              | \$10   |

### Order Example:

A104 40MHz, 128KB RAM, 4 ch. 12-bit DAC.  
 A104 + 7x2 = \$169 + \$80 = \$249



1724 Picasso Avenue, Davis, CA 95616 USA  
 Tel: 530-758-0180 • Fax: 530-758-0181

CE FC

sales@tern.com

http://www.tern.com