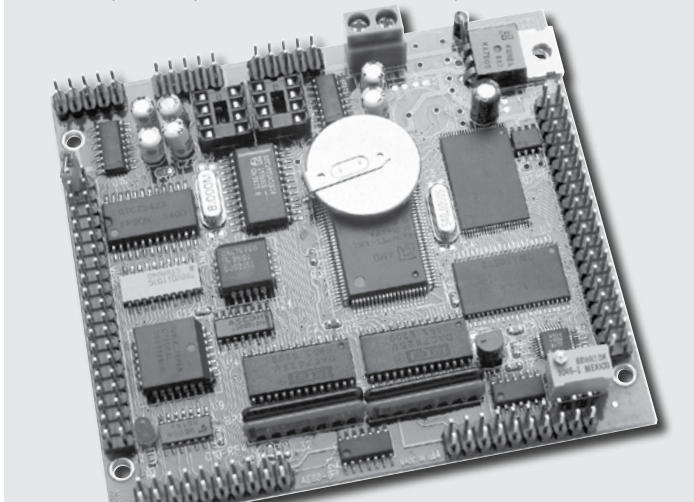


A-Engine86-D™

8 High Speed DACs

40 MHz!

16-bit Flash and SRAM, 300 KHz ADCs and DACs, I/Os, timers/counters, and UARTs



Features:

- 3.6x3.2x0.3" for **AE86D**
- 190/30 mA normal/power-save
- 40 MHz, 16-bit CPU (186), program in C/C++
- 256 KW 16-bit Flash, 256KW 16-bit SRAM
- 32 PIOs, 3 serial ports (Up to 3 RS232, 2 RS485, 1 RS422)
- Real-time clock, battery
- 512-byte EE, PWM, timer/counters
- Optional switching regulator supports 9-30V power input
- 8 ch. 300 KHz 12-bit ADC (AD7852)
- 8 ch. parallel 12-bit DAC (DAC7625) with output buffer
- 3 ch. 16-bit hardware counters (82C54)
- **Not all features included in base pricing.**

The **A-Engine86-D™ (AE86D)** is a high performance C/C++ programmable controller based on 40 MHz, 16-bit CPU (186), ideal for industrial process control and high-speed data acquisition.

The AE86D offers a unique combination of embedded peripherals. In particular, the AE86D features three 16-bit hardware timers/counters (82C54) in addition to the three timers already integrated into the microprocessor. The AE86D also features more DACs, a total of 8 channels, than most other designs.

Input/Outputs

The 186-generation microprocessor used on the AE86D offers 32 channels of programmable digital I/O (some are multiplexed with other processor functions). These channels can interface with TTL-level (0, 5V) digital signals through board-edge headers.

Two high speed parallel DACs (DA7625) chips (each providing four channels) can be installed providing a total of eight analog output signals. These DAC outputs are buffered by operational amplifiers with configurable gains and adjustable offset. As default (gain=2), analog outputs are $\pm 2.5V$ to 0-5V with offset adjustable. Other output voltage levels ($\pm 5V$, 0-10V, $\pm 10V$) can be specially

hardware configured. Sample software program shows AE86D DAC outputting a smooth 18.5KHz sine wave.

Eight channels of 12-bit parallel ADC (AD7852, 300KHz, 0-5V) can be installed.

The AE86D can support a wide range of serial communications requirements. An optional 3rd UART (SCC2691) can be added to the two UARTs internal to the microprocessor for a total of 3 serial ports. All three are configured for RS232 operation by default. One port (SER1) can optionally be configured for RS485 or RS422 operation, and another port (SCC) can be optionally configured for RS485.

Board Memory

A total of 1 MB of memory space is available for the use of code and data. It consists of 256 KW (512 KB) worth of Flash, and up to 256 KW (512 KB) worth of battery-backed SRAM. Additional 512-byte serial EEPROM is onboard for storage of non-volatile data (like board identifiers, or other program parameters).

Other Features

A real-time clock (RTC72423) with battery can be installed on board. The most unique peripheral on the AE86-D is the integrated 82C54, which features three 16-bit programmable interval timers/counters. These timers have six programmable timer modes, allowing the 82C54 to be used as an event counter, elapsed time indicator, programmable one-shot, and many other applications.

All chips are surface mounted for highest reliability. All options can be installed with no conflict on the same board. An optional switching regulator can be installed to reduce power consumption and heat.

Ordering Information

AE86D	\$169/\$129/\$99/\$69	Qty 1/50/100/1K+
--------------	------------------------------	-------------------------

Includes 186 with I/Os, 2 UARTs, 6 timers, PPI, watchdog timer, EE, and 256KW ACTF™ Flash, 64KW SRAM

NOT including add-on options. OEM option discounts available.

Add-on Options:

- | | |
|---|-----------|
| 1) 16-bit SRAM: 256 KW | \$20 |
| 2) Real-time clock (RTC) and battery | \$20 |
| 3) 3 rd UART (SCC2691): (a)RS232/ (b)RS485 | \$30 |
| 4) 4 ch. 12 bit DAC (DA7625), up to 2 chips | \$40x2 |
| 6) 8 ch. 12 bit ADC, 300 KHz (ADS7852) | \$20 |
| 8) RS485/422 driver for SER1 | \$10/\$20 |
| 9) Switching regulator | \$20 |

Typical Order Example:

AE86D, 256KW SRAM, 8 ch. 12-bit ADC (ADS7852)

AE86D + 1 + 6 = \$169 + \$20 + \$20 = \$209



CE FC

1724 Picasso Avenue, Davis, CA 95618 USA
Tel: 530-758-0180 • Fax: 530-758-0181

sales@tern.com

http://www.tern.com