

E-Engine™ 80 MHz CPU, 100M Ethernet, USB, CF and 16-bit ADC

NEW!



Introduced in 2006

Features:

- 3.6 x 2.3 x 1", 200 mA at 5V for 80 MHz
- 40 or 80 MHz, 16-bit CPU, program in C/C++
- 256 KW 16-bit Flash, 256 KW 16-bit SRAM, 512 bytes EE
- 20+ TTL I/Os, Real-time clock, 2 serial ports, PWM, counters
- 4 ch 16-bit parallel high speed ADC (AD7655)
- Hardware TCP/IP stack for 100M Base-T Ethernet
- CompactFlash card with FAT file system support

Introduction

The **E-Engine™ (EE)** is a high performance, low cost, C/C++ programmable controller based on a 40 MHz R8820(5V) or 80MHz R1120(3.3V) 16-bit CPU. Ideal for both OEM or prototyping purposes, the EE is intended for demanding networked industrial process control and networked high-speed data acquisition applications.

As embedded systems have developed, advanced connectivity has become another critically important aspect of modern embedded products. The EE addresses this by also integrating advanced connectivity solutions such as hardware USB and TCP/IP network modules, plus Windows compatible file system, making this the ideal core platform for your next-generation projects.

IP Networking

The optional onboard WIZNET Ethernet module with RJ45 connector provides 10M/100M base-T network connectivity. This module represents a huge leap forward in performance when compared to other raw MAC-only embedded Ethernet networking solutions commonly in use today.

This module releases internet connectivity and protocol processing from the host processor, which represents a huge improvement over software-based TCP/IP stacks. No processor cycles are used to track packet transmission/retransmission, timeouts, etc. The resulting system can easily handle transmissions in the 200KB/s+ range in real world applications, leaving the board free to manage other real-time behavior. Software libraries and demo project demonstrating TCP and UDP clients/hosts, HTTP web servers, and more are provided.

The WIZNET module has a hardware LSI TCP/IP stack implementing protocols like TCP/IP, UDP, ICMP and ARP. Four independent sockets can be handled simultaneously, with a peak 4 Mbps protocol processing speed. It has a 16KB internal transmit and receiving buffer

which is mapped into host processor's direct memory. The host can then access the buffer via high speed DMA transfers.

USB to PC interface

The **EE** integrates a USB stack chip to offer a very low overhead USB 1.1/2.0 slave interface. The onboard hardware fully handles USB stack processing, and provides large transmit/receive hardware buffers for high-speed bi-directional 8-bit parallel communication. No USB specific firmware programming is required on the controller side. On the PC side, VCP drivers are available supporting peak transmission rates of 150 KB/s.

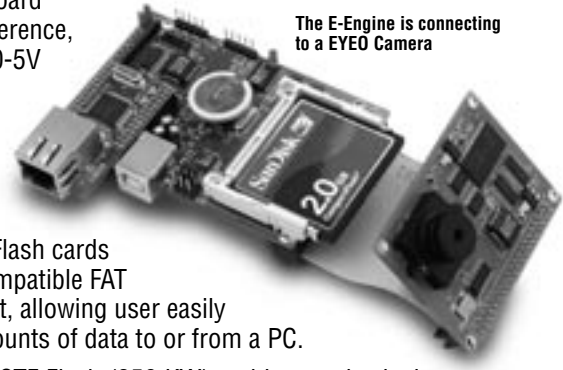
Other Embedded Peripherals

A 16-bit parallel ADC (AD7655, 0-5V, 1 MHz) provides 4 analog inputs. With on-board precision 2.5V reference, the ADC accepts 0-5V analog inputs at 16-bit resolution of 0-65,535.

The **EE** supports up to 2 GB mass storage CompactFlash cards with Windows compatible FAT filesystem support, allowing user easily transfer large amounts of data to or from a PC.

The **EE** features ACTF Flash (256 KW) and battery-backed SRAM. It has 3 timers, 20+ PIOs, 512-byte EE, 2 RS232 ports. A real time clock (DS1337, Dallas) is available.

The **EE** can be powered via USB, or regulated 5V. Two pin screw terminal can be installed replacing USB socket plus a 5V regulator allowing DC power of 9-12V. The **EE** works with most TERN expansion boards.



The E-Engine is connecting to a EYE0 Camera

Ordering Information

EE40 **\$99/\$84/\$69/\$49** **Qty 1/50/100/1K+**
Includes 40 MHz CPU, 64KW SRAM, PIOs, 2 RS232, 3 timers, watchdog timer, 512 bytes EE, 256KW flash
NOT including add-on options. OEM option discounts available.

Add-on Options:

- 1) SRAM 256KW.....\$20
- 2) Real-time clock (RTC) and battery.....\$20
- 3) CompactFlash interface\$20
- 4) 100 BaseT hardware TCP/IP Ethernet.....\$30
- 5) USB controller\$30
- 6) 4 ch. 16-bit ADC, 1MHz (AD7655).....\$60
- 7) EE80, 80 MHz upgrade\$10

Typical Order Example:

E-Engine40™, CompactFlash, TCP-IP Module
EE40 +3 +4 = \$99+\$20+\$30 = \$149



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