

EyeC™ *Low Cost, C/C++ Programmable, Standalone Vision System*



Features:

- * CMOS Image Sensor (640x480, 320x240)
- * Supports Grayscale/Color, 1MB image FIFO
- * Wide viewing angle Micro Lens
- * 4x3", 9-30V DC Power, Peak <1W
- * x86 16-bit CPU, CF with FAT file system
- * 10 BaseT Ethernet with TCP/IP
- * RS232/RS485, RTC, Battery.
- * Real time clock, TTL I/Os

INTRODUCTION

The **TERN EyeC™** controller is an innovative new solution for a wide range of vision applications: machine vision; check ID marking; pattern recognition; industrial process control; motion position detection; security monitoring.

The EyeC™ is the ideal board for adding lowpower standalone digital image acquisition and recording to any embedded application. Existing CMOS camera systems generally rely on a connection to other central systems for data storage, image processing, or power. The EyeC is intended to be a true stand-alone solution.

IMAGE ACQUISITION

The onboard CMOS image sensor has 640*480 active pixels. With a pixel clock of 20 MHz, the hardware frame capture period is approximately 40ms (allowing ~25 fps acquisition), making it capable of tracking relatively high-speed motion. Real-time images captured is made available to the user-application at a consistent rate of 10 fps, and indefinite acquisition/storage to the CompactFlash card is possible at ~3-4 frames/second.

The user application can access any pixel directly from this memory buffer. The EyeC™ can be programmed to capture images, analyze any zones of interested pixels, and make control decision based on that image processing result in real-time.

These images can also be saved in Windows bitmap (.bmp) format for easy storage, and transfer to the PC. Tens of thousands of images can be stored with onboard removable CompactFlash memory cards, using the provided FAT16 filesystem support.

STAND-ALONE CONTROLLER

The EyeC™ is a complete controller including a 16-bit 40 MHz x86 CPU, onboard regulator, 512KB Flash, battery backed SRAM, 1 MB image FIFO, an image sensor, two RS232 ports and a CompactFlash interface.

The 10BaseT Ethernet port has TCP/IP support, including basic HTTP, SMTP code. Two RS232 serial ports (SER0 and SER1) can handle 115,200 baud with high reliability. SER1 can also be hardware configured as RS485. There are a real time clock with Battery backup, 10+ TTL I/O pins and 3 16-bit timer/counters. A high speed parallel data-bus expansion header supports external USB interface for high speed data transfer to a PC. A utility software "EyeC Viewer" is available on Windows-based PC for real-time display of camera image.

With dimensions of 3x4 inches, the **EyeC™** is designed to fit into an Aluminum Extrusion Enclosure for easy deployment and installation. Optional switching regulator allows the EyeC to sleep in VOFF mode to reduce power consumption in less than 30 uA.

Order Information

EyeC™

\$169/\$139/\$99/\$79 for **Qty 1/100/1K/5K**

Includes: 40MHz CPU, 256KW ACTF Flash, 64KW SRAM, Image sensor, Micro Lens, 1MB image FIFO, 2 RS232, 3 timers, 10+ TTL I/O.

Not Include Add-on Options

- 1) 256K words SRAM\$20
- 2) RTC+BAT.....\$20
- 3) 10 Base-T Ethernet.....\$30
- 4) CompactFlash Interface.....\$20
- 5) RS485 driver for SER1.....\$10
- 6) Switching Regulator.....\$20
- 7) Aluminum extrusion enclosure.....\$40



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