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1990IAPPP..39....1Z

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THE EDC-1000 ELECTRONIC IMAGING SYSTEM

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received: 3 November 1989; revised: 2 January 1990

Why should a computer camera cost more than the computer???

The EDC-1000, built by ELECTRIM (ELECTRonic IMaging) Corporation, is a compact, digitally controlled/digital output television-like monochrome camera designed and built in the United States specifically for the computer technology market. The EDC-1000 (see Figure 1) is an inexpensive alternative to a standard TV camera attached to special analog-to-digital (A/D) and frame-grabber circuitry. The result is the most cost effective way to put image data into a computer and let your computer go to work directly on the data.

The EDC-1000 has applications wherever the power of the computer can be applied to image data:

- security (surveillance);
- telecommunications (picture phones);
- office automation (document imaging);
- desk top publishing;
- factory automation (robot/machine vision);
- industrial inspection (pattern recognition);
- education; computer-based commercial and graphic art;
- picture databases; and
- astronomy.

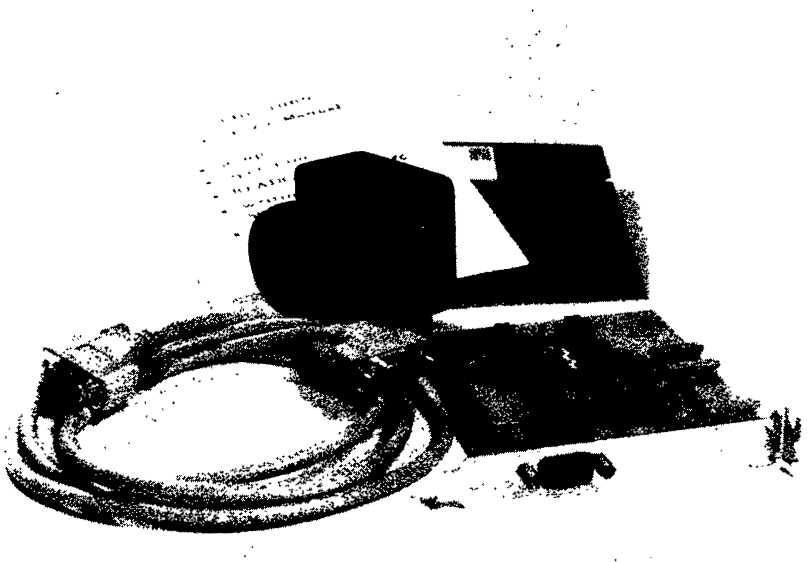


Figure 1. The EDC-1000 imaging system.

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The main features of the EDC-1000 are summarized in Table 1. The unit operates fully under computer control, and is totally computer compatible. No additional A/D, D/A, or other hardware is required. The EDC-1000 significantly reduces the complexity of digitizing stationary or moving images. A single half-size plug-in card will permit any IBM PC, XT, AT, PS/S Model 25 or 30 or compatible computer to control the camera with simple commands. The camera uses a charged-coupled device (CCD) detector for the utmost in reliability, ruggedness, high sensitivity, and geometric fidelity.

Everything about the EDC-1000 is easy. Power is derived from the computer bus itself.. All timing and video signals as well as power are carried on a single multiconductor cable which connects the camera to the computer. The computer controls exposure time and frame scanning time. Under computer control, multiple images can be integrated to improve the signal-to-noise ratio where low light level conditions are encountered. The EDC-1000 incorporates asynchronous scanning techniques, making it possible to trigger the frame reset and scanning to an external event. Output from the camera system is an 8-bit digital signal corresponding to the quantized value of brightness at serially sampled spatial data points (256 gray levels).

The camera requires an IBM-PC or compatible computer with only a single floppy disc drive, 256K RAM, a free expansion slot to install a half size card, and either PC-DOS or MS-DOS version 2.1 or higher. Either color or monochrome monitors can be used. Software furnished with the EDC-1000 on a 5.25-inch diskette supports CGA, EGA, MCGA, VGA and Hercules adaptors. Images can be saved in either TIFF or PCX (PC Paintbrush) format for compatibility with desktop publishing software. The software to read and control the camera is written in "C" and assembly language; linkable routines that are compatible with C, Pascal and BASIC are also provided. The EDC-1000 continuously acquires gray scale images at up to 30 frames per second. Speed will vary depending on exposure time, graphic display mode, and computer clock speed. Featuring a solid state image sensor, the camera has the following properties:

The ECD-1000 digital camera is shipped with: lens, cable, interface hardware, software on a 5 1/4 inch diskette, owner's manual and one year warranty. The unit can be purchased direct from ELECTRIM at the address above (or phone us at 609-799-7248) for $400.00, plus $6.00 shipping and handling charge. New Jersey residents must add 6% sales tax. *Please mention this article in your correspondence with us.*

TABLE 1.
EDC-1000 Technical Specifications

image size/sensing area	2.64 mm x 2.64 mm
pixel size	13.75 microns x 16 microns (13.75 x 8 with interlaced scanning)
pixel array	192 (H) x 165 (V) (192 x 330 with interlaced scanning)
dynamic range and S/N	60 dB typ.
uniformity	10% typ.
spectral range	400-1100 nm
peak quantum efficiency	50% @ 700 nm
saturation signal (single scan)	100,000 electrons/pixel
exposure time (computer controlled)	30 msecs to 30 secs.
pixel scan rate	proportional to computer clock speed
weight (camera head assembly)	200 gm. (7 oz.)
(standard lens)	80 gm. (2.8 oz.)
lens	16 mm, f/1.6
lens mount	C
cable length	6 feet
operating temperature	32 - 110 degrees F
power requirements	+5V, 100 ma; +12V, 60 ma; -12V, 50ma
minimum computer configuration	256K RAM, 1 floppy disc drive

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