

# an Unheard of Price for the CPU/MEMORY You've Heard So Much About

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## CPU 8085/88

Speed, power, reliability: CPU 8085/88 has it all. **Speed?** Both processors run at 5 MHz to complete jobs faster and save you precious time; boards qualified under the CSC\* high-reliability program run at 6 MHz, making CPU 8085/88 the fastest S-100 CPU in the business. . .bar none. **Power?** No other existing product executes both 8 and 16 bit code with the speed and precision of CPU 8085/88. **Reliability?** While others are still struggling to catch up, we've been delivering CPU 8085/88 for well over a year. In fact, most major software houses are developing 16 bit code on CPU 8085/88 because it's fast, dependable, and reliable.

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## RAM 17

No other static memory matches our unbeatable combination of high operating speed and ultra-low power consumption. CompuPro's innovative CMOS design techniques restrict current consumption to less than 2 Watts typical, while maintaining an operating speed (no wait states) in excess of 6 MHz. And, unlike some boards that provide only 23 address lines plus phantom or 24 address lines without phantom, RAM 17 gives you 24 address lines plus phantom so that you can take full advantage of the S-100 bus' extended addressing capability.

Both boards, which conform fully to all IEEE 696/S-100 standards and are backed by a 1 year limited warranty, normally list for \$1520. . .an exceptional value by any standard.

*But to introduce you to the benefits of 8/16 bit operation on the S-100 bus, we are now offering both boards for an amazing*

**\$1220!**

*(For CSC\* boards, add \$200.)*

**Save time, thanks to ultra-high speed operation; save hassles, thanks to our equalled record for reliability; and now, save money as well. We don't just give you a competitive edge: We do it at a price you can afford.**

Call (415) 562-0636 for the name of the authorized CompuPro sales center nearest you, or for placing factory direct VISA/Mastercard orders (prices shown do not include tax or shipping charges).

**CompuPro**<sup>TM</sup>

division

**GODBOUNT**  
ELECTRONICS

OAKLAND AIRPORT, CA 94614

(415) 562-0636

\*Boards qualified under the Certified System Component high-reliability program undergo a 200 hour burn-in, extensive quality control testing, and are backed with an extended 2 year warranty.



# GOODBYE, DISK WAIT... M-DRIVE™ HAS ARRIVED.

**What does M-Drive do?** Simply stated, M-Drive provides up to a 3500% increase in speed during disk-intensive computing.

**How does M-Drive work?** It uses G and G Engineering's Warp Drive® software to run extended address IEEE 696/S-100 RAM under CP/M® 2.2, so that the memory appears identical to a disk drive. The RAM can be formatted, it has a directory, and it can hold files which may be written, read, copied to or from another disk, or executed. There are no slowly rotating and buzzing disk drives when M-Drive is in use; only the sound of data being transferred at the speed of light.

**Does this obsolete the floppy disk?** Not quite. A floppy disk is still required for system initialization, and for saving finished files. At all other times, however, M-Drive saves you the tedium of going back and forth between computer and disk.

**What are the hardware requirements?** M-Drive is configured for systems that include a 6 MHz CompuPro CPU 8085/88 dual processor, Disk 1 DMA disk controller, and System Support 1.

**How can I upgrade to M-Drive?** Select either the 128K or 256K M-Drive package, then return your CompuPro CP/M disk to the factory for modification. If your CPU 8085/88 runs at 4 MHz, it must also be returned and upgraded to 6 MHz. The costs of these modifications are included in the prices below.

**M-DRIVE: THE FASTEST WAY TO COMPUTE**  
128K M-DRIVE with low power, high speed RAM and software: \$1590  
256K M-DRIVE with low power, high speed RAM and software: \$3100

## BIG PRICE REDUCTIONS ON STATIC MEMORY

CompuPro memories are the fastest in the S-100 business, performing effortlessly with 6 MHz Z-80® and 10 MHz 8088/86 processors. But speed isn't all that we offer; consider the low power consumption (again, the lowest in the business), innovative technical design, fully static operation (for flawless DMA), an enviable record for reliability, and the experience we've acquired from over 6 years of making quality S-100 memory. Compare our specifications with the rest...you'll see why systems integrators world-wide choose CompuPro memory for commercial, industrial, and scientific applications. (Note: CSC boards are qualified under the Certified System Component high-reliability program, with 200 hour burn-in and 2 year extended warranty.)

**8K/16K/24K/32K RAM 20 Static Memory Board.** With extended addressing and bank select. **RAM 20-8K:** \$210 A/T, \$280 CSC. **RAM 20-16K:** \$285 A/T, \$355 CSC. **RAM 20-24K:** \$355 A/T, \$425 CSC. **RAM 20-32K:** \$425 A/T, \$495 CSC.

**16 64K RAM 16 Static Memory Board.** "Hermaphrodite" 64K memory runs in 8 bit systems as a 64K X 8 board, or in 16 bit systems as a 32K X 16 board. **RAM 16-64:** \$895 A/T, \$995 CSC.

**48K/64K RAM 17 Static Memory Board.** Exceptionally low power (2W max, 1.6W typ for 64K) board runs faster and cooler than dynamics, while flawlessly handling DMA. **RAM 17-48K:** \$650 A/T, \$750 CSC. **RAM 17-64K:** \$795 A/T, \$895 CSC.

**16 128K RAM 21 Static Memory Board.** Exceptionally low power, high speed static memory. Configure as 128K X 8 or 64K X 16. **RAM 21-128K:** \$1695 A/T, \$1895 CSC.

How to order: Call 415-562-0636 for the name of the authorized CompuPro sales center nearest you, or for placing factory direct VISA® /Mastercard® orders. Prices shown do not include tax, shipping, or dealer installation/support charges (if applicable).

\*LEGAL CORNER: M-Drive is a trademark of CompuPro. Warp Drive is a trademark of G and G Engineering.

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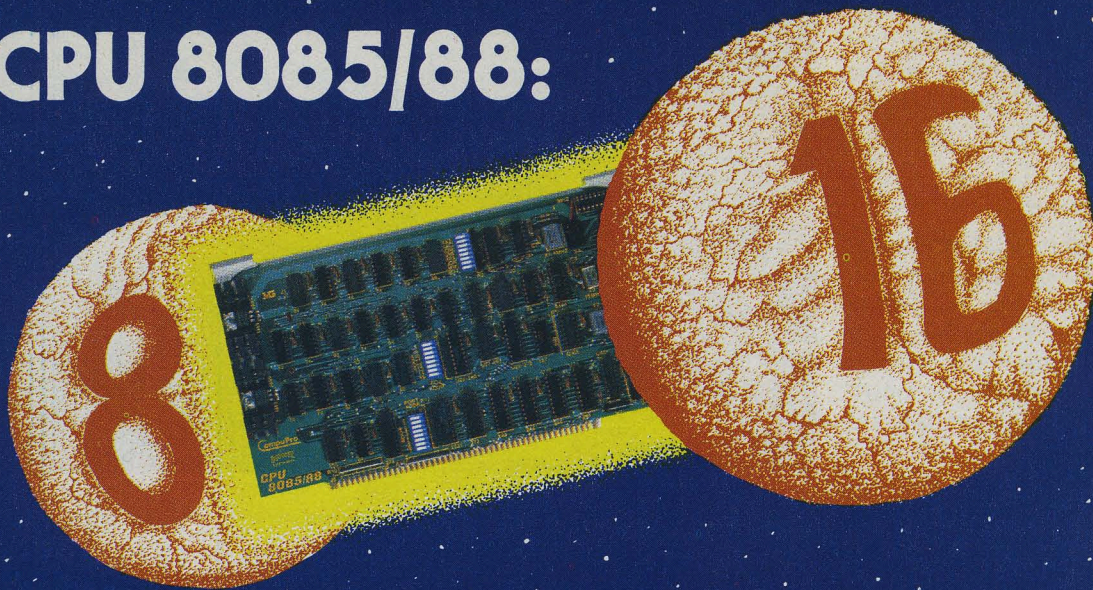
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(415) 562-0636



# CPU 8085/88:



## MORE THAN A BRIDGE BETWEEN TWO WORLDS

When we shipped  
the first CPU 8085/88 back in June of  
1980, we created more than a bridge between the  
8 bit world of the present and the 16 bit world of the future:

We created a standard for professional level, high speed 8/16 bit  
computing on the S-100 bus. Already a standard in the software industry,  
CPU 8085/88's unique combination of an 8088 to handle 16 bit software - along  
with an 8085 to execute 8 bit software - has withstood the test of time and is now  
recognized as the most efficient way to introduce 16 bit power into an 8 bit system.

For the most demanding commercial, industrial, and scientific 8/16 bit  
applications, CPU 8085/88 is the answer. See the board that's more than a bridge  
between two worlds at finer computer stores and systems integrators world-wide.

**Prices:** \$425 assembled (both CPUs run at 6 MHz), \$525 qualified under the Certified System Component high-reliability program (both CPUs run at 8 MHz). Call 415-562-0636 for the authorized CompuPro sales center near you, or for placing factory direct VISA® /Mastercard® orders. Prices do not include tax, shipping, or dealer support services (if applicable).

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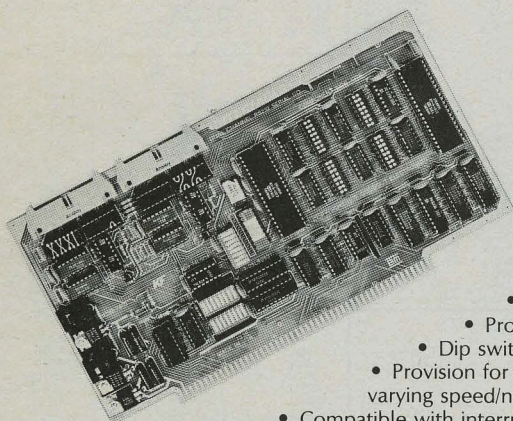


# FIRST CLASS Interfacing

CompuPro's feature-packed S-100 I/O boards conform to the IEEE 696/S-100 standard to provide reliable, cost-effective interfacing between your computer and its associated peripherals (such as terminals and printers).

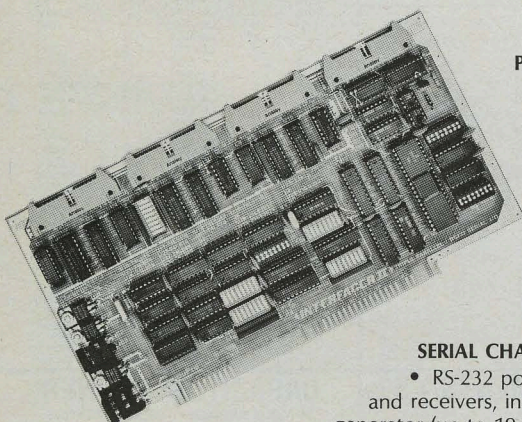
**Interfacer I** is a dual channel, full RS-232 serial board. Hardward UARTs perform all basic I/O operations, thus freeing the CPU from the need to perform these routines; this increases speed and reliability.

**Interfacer II** incorporates one channel of serial I/O (identical to an Interfacer I serial port), three full duplex parallel ports for handling I/O data, and a separate full duplex parallel port for status and interrupt control to give unparalleled interfacing flexibility.



- Dual RS-232 ports with full handshake
- Independently selectable Baud rates for each port, up to 19.2 KBaud – simultaneously drives slow and fast devices (such as teletype/terminal combinations)
- EIA line drivers and receivers
  - Conversion to TTL, current loop (20 mA), and RS-232 levels for interfacing to almost any kind of serial device
  - On-board crystal timebase for freedom from system clock variations
  - Software programmable UART parameters, interrupt enables, and handshaking lines (handshaking lines are full RS-232 – not just a three wire system)
- Operates with 2 or 4 MHz systems
  - Provision for optically isolated current loop for each channel
  - Dip switch selectable port addresses
  - Provision for custom frequency compensation on both receive and transmit sides (accommodates varying speed/noise situations or unusual cable lengths)
- Compatible with interrupt-driven I/O systems

## Interfacer I



### PARALLEL CHANNELS

- Latched input and output data with 24 mA drive current
- Each full duplex port has strobe, attention, and enable bits (each with selectable polarity); an input interrupt; and 16 data lines, giving a three port total of 48 true data lines
  - Interrupts for each input port
  - Separate 25 pin connectors with power for each channel
  - Separate status port for interrupt mask and port status
  - No mode selection/initialization required
- Handles Centronics type interface, daisy type printers, and interfaces to A/D converters

### SERIAL CHANNEL

- RS-232 port includes all features of an Interfacer I serial channel, such as EIA line drivers and receivers, interfacing to almost any kind of serial device, on-board crystal controlled Baud rate generator (up to 19.2 KBaud), full interrupt capability, etc.
- Works with any software I/O drivers developed for the Interfacer I

## Interfacer II

Either board costs **\$199 unkit** (sockets, bypass capacitors pre-soldered in place), **\$249 assembled**, and **\$324 qualified** under the Certified System Component high-reliability program.

These and other CompuPro products are available at finer computer stores world-wide;

write us direct if there's no store in your area.

TERMS: Californians add tax. Allow 5% for shipping, excess refunded. VISA®/Mastercard® orders call (415) 562-0636, 24 hours. Please include street address for UPS delivery.

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Bldg. 725, Oakland Airport, CA 94614

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# PROVEN Computing SOLUTIONS

We give you more of what you buy a computer for: to gain a competitive edge in your industrial, commercial, or scientific application. While other computers try to make the best of slow memory, slow processors, and me-too engineering, **CompuPro** is delivering solutions for today's commercial computing... proven solutions that create expandable, modular, fast, exceptionally reliable, and truly professional level machines that conform fully to the IEEE 696/S-100 standards. We back all products with a minimum 1 year limited warranty.

**When you depend on your computer, choose a computer on which you can depend: S-100 from CompuPro.**

- 1 DISK 1, A SUPERB DISK CONTROLLER.** Disk controllers don't have to be your system's bottleneck: **Disk 1** is lightning fast, thanks to properly implemented DMA (with arbitration) and data transfer that's independent of CPU speed. Handles up to four 8" or 5.25" floppy disk drives, single or double-sided, single or double density (soft sectored). With BIOS for CP/M-80\*. **Manual available for \$25. A/T \$495, CSC \$595. Coming soon: Disk 2, the fast DMA hard disk controller.**
- 2 CP/M-86.** Available only with **Disk 1** purchase. Supplied on diskette with full documentation; ready for load and go operation. **\$300.**
- 3 OASIS\* OPERATING SYSTEM.** Single user (**\$500**) and multi-user (**\$850**) available for use with **CPU Z**. Supplied on diskette with full documentation. **Coming soon: OASIS 16** for use with 16 bit systems.
- 4 COMPLETE DUAL DISK DRIVE SYSTEM.** With one **Disk 1** board, desktop dual drive enclosure with Shugart SA-800 series drives, and power supply cable. Also includes CP/M-80. **Introductory special: \$2155.**
- 5 SYSTEM SUPPORT 1.** Includes battery operated clock/calendar; sockets for battery backup RAM, optional 9511 or 9512 math processor, and 2716 ROM; RS-232 serial port; triple interval timers; dual interrupt controllers; power fail interrupt; and more. Comprehensive owner's manual includes numerous software examples. **\$295 Unkit, \$395 A/T, \$495 CSC** (add \$195 to the above prices for the optional math processor).
- 6 8 BIT CPU Z.** A Z80\*-based CPU board that includes all standard features plus many convenience options. Meets all IEEE 696/S-100 specifications, including timing. **\$225 Unkit, \$295 A/T** (both operate at 4 MHz), **\$395 CSC** (with 6 MHz CPU).
- 7 16/8 BIT CPU 8085/88.** Now there's an easy way to gain 16 bit capability without sacrificing your library of 8 bit software: **CPU 8085/88** combines an 8088 CPU to handle 16 bit software and an 8085 CPU for 8 bit software. **\$295 Unkit, \$425 A/T** (both operate at 5 MHz); **\$525 CSC** (with 6 MHz 8085 and 8088).
- 8 8088/8086 MONITOR-DEBUGGER SOFTWARE.** Ideal for use with **CPU 8085/88**. Supplied on single sided, single density, soft sectored 8" disk. CP/M-80 compatible (not required if you have CPM/86). Great development tool; mnemonics used in debug conform as closely as possible to current CP/M DDT mnemonics. **\$35.**
- 9 8 BIT CPU 8085.** Same as **CPU 8085/88**, but without 8088. May be easily upgraded to 16 bit operation. **\$235 Unkit, \$325 A/T, \$425 CSC.**
- 10 INTERFACER 1.** Two RS-232 serial ports, with full handshaking and independently selectable Baud rates, connect your computer to serial peripherals. **\$199 Unkit, \$249 A/T, \$324 CSC.**
- 11 INTERFACER 2.** Adds three full duplex parallel ports, and one serial port with all the features of an **Interfacer 1** serial port, to your computer. **\$199 Unkit, \$249 A/T, \$324 CSC.**
- 12 INTERFACER 3-5.** Includes five RS-232 serial ports (2 synchronous/asynchronous, 3 asynchronous) with full handshaking. Includes software programmable Baud rates and many other convenience features. **\$599 A/T, \$699 CSC.**
- 13 INTERFACER 3-8.** Same as above, but with eight full RS-232 serial ports (2 synchronous/asynchronous, 6 asynchronous). Ideal for multi-user/multi-terminal systems. **\$699 A/T, \$849 CSC.**
- 14 SPECTRUM COLOR GRAPHICS BOARD.** With 8K of IEEE-compatible static RAM, full duplex bidirectional I/O port for keyboard or joystick interface, and 6847-based graphics generator that can display all 64 ASCII characters. 10 modes of operation, from alphanumerics/semi-graphics in 8 colors to dense 256 X 192 full graphics. **\$299 Unkit, \$399 A/T, \$449 CSC.**
- 15 6 SLOT HIGH SPEED MOTHERBOARD.** With all edge connectors, Faraday shielding, extensive bypassing, and split active termination. **\$89 Unkit, \$129 A/T.**
- 16 12 SLOT HIGH SPEED MOTHERBOARD.** Same as above, but with 12 slots. **\$129 Unkit, \$169 A/T.**
- 17 20 SLOT HIGH SPEED MOTHERBOARD.** Same as above, but with 20 slots. **\$174 Unkit, \$214 A/T.**
- 18 MEMORY MANAGER.** Extends the addressing of older S-100 machines beyond 64 KBytes to allow for greatly expanded memory capacity. **\$59 Unkit, \$85 A/T, \$100 CSC.**
- 19 ACTIVE TERMINATOR.** Promotes reliable and accurate data transfer in older machines by properly terminating bus lines, thereby minimizing ringing, crosstalk, overshoot, noise, and other gremlins associated with unterminated lines. **\$34.50 Unkit, \$59.50 A/T.**
- 20 2708 EPROM BOARD.** This board is the way to store often used routines or pieces of software. **\$85 Unkit, \$135 A/T, \$195 CSC** (2708s not included).
- 21 DOCUMENTATION.** User manuals are available for all products. **Interfacer 3, \$10; Disk Controller, \$25; System Support 1, \$20;** most others, **\$5.** Also available: "**CompuPro Product User Manuals: 1975 - 1980**". This 250+ page book includes data on all older **Godbout/CompuPro** products, as well as many newer products such as the **Spectrum Color Graphics** board, **Interfacers 1 and 2, CPU 8085/88, motherboards, CPU Z, and more.** Whether you want to evaluate the innovative engineering behind **CompuPro** products, or study the nuts and bolts of high speed computer operation, this is the book for you. **\$20 plus shipping.**
- 22 RAM 16-64.** Configurable as 64K X 8 for 8 bit systems or 32K X 16 for 16 bit systems. Static, IEEE-696/S-100 compatible, extended addressing, 10 MHz operation. **\$1195 A/T, \$1295 CSC.**
- 23 RAM 17-64.** The lowest power (¼ Amp typical) 64K X 8 static board in the business. IEEE-696/S-100 compatible, 4 optional 2K windows, no wait states with 6 MHz Z80. **\$1095 A/T, \$1195 CSC, \$875 Unkit.**
- 24 RAM 20-32.** For lower density applications. Static, IEEE-696/S-100 compatible, extended addressing or bank select, up to 10 MHz operation. **\$559 A/T, \$659 CSC, \$449 Unkit.** 8K and 16K versions also available.

Most **CompuPro** products are available in **Unkit** form. **Assembled/Tested** (both with 1 year warranty), or qualified under the high-reliability **Certified System Component** (CSC) program (200 hour burn-in, 2 year extended warranty, more). Note: Unkits are not intended for novices, as de-bugging may be required due to problems such as IC infant mortality. Factory service is available for **Unkits** at a flat service charge.

\*LEGAL CORNER: Z80 is a registered trademark of Zilog; CP/M is a registered trademark of Digital Research; OASIS is a trademark of Phase 1.

**How to Order:** Call 415-562-0636 for the name of the authorized **CompuPro** sales center nearest you, or for placing factory direct VISA®/Mastercard® orders. Prices shown do not include tax, shipping charges, or dealer installation/support services.

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