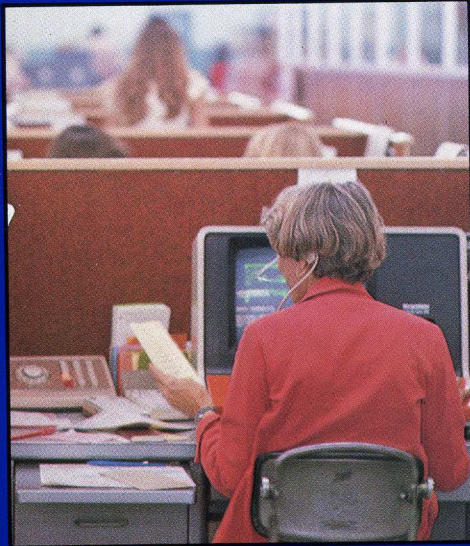
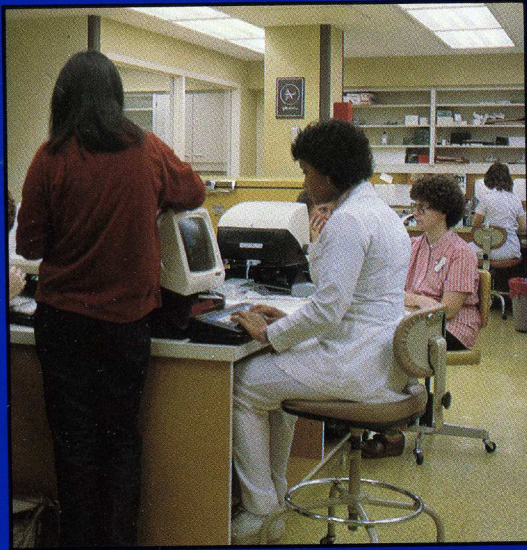


**L**Leading the  
microcomputer  
technology



 **ADVANCED  
DIGITAL  
CORPORATION**





**E**ach **Advanced Digital** system is designed and manufactured with only high quality, extremely reliable components to meet the most demanding customer requirements and varied applications. Advanced Digital products are at work in a variety of business, professional, and industrial fields ranging from medicine to electronics.



# Putting the microcomputer to work

**Advanced Digital Corporation** introduced the world's first single board S-100 microcomputer in 1980. Since then, the product line has expanded and undergone major enhancements and technological advancements. As a major supplier of board-level products to the S-100 microcomputer marketplace, **Advanced Digital** discovered the need for a system that: 1) would take advantage of the latest state-of-the-art technology; 2) would provide the user with adequate expansion capabilities; and 3) would be supported by a readily-available service capability.

**Advanced Digital** decided to fill this void by developing a family of S-100 microcomputers that would respond to the needs of the market. The transition from boards to systems was a natural extension of **Advanced Digital's** expertise and led to the introduction of the first system to incorporate a single board computer in 1981.

## **Advanced Digital Makes It Easy**

**Advanced Digital** makes it easy for you to put the microcomputer to work by providing a broad range of expandable S-100 microcomputer systems. You can choose from a variety of processor speeds (4, 6, and 8MHz), single or multi-user configurations, 8 or 16-bit technology, and up to ten users.

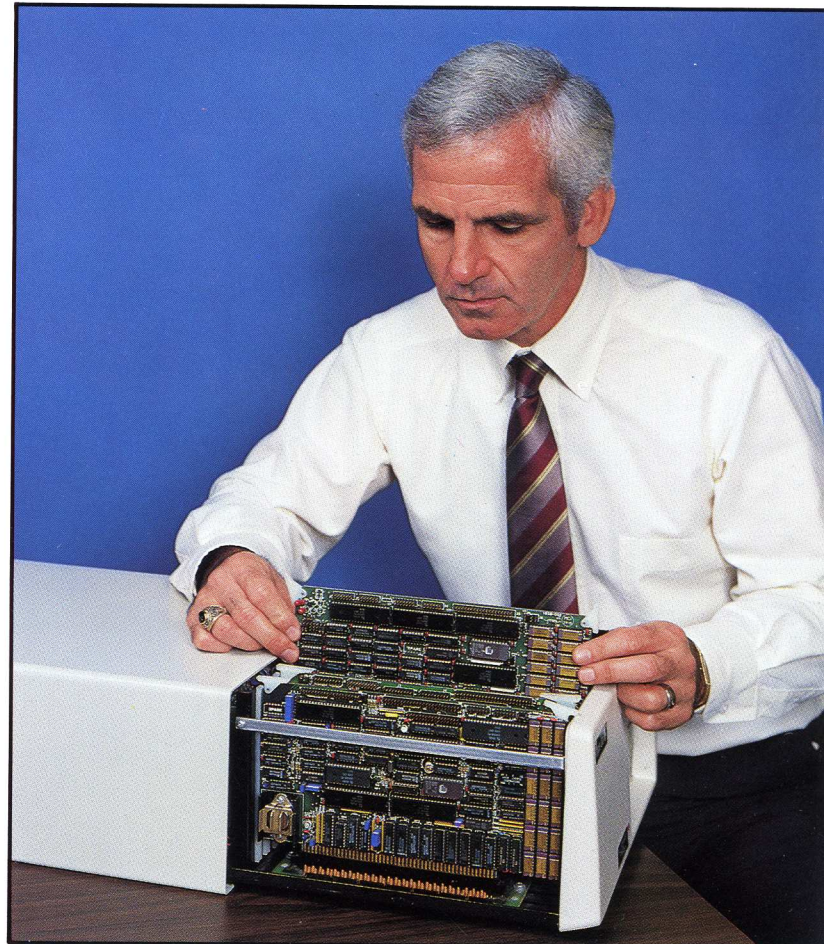
All **Advanced Digital** systems are designed and manufactured utilizing only high-quality, extremely reliable components. Every system is completely assembled and subjected to numerous quality control evaluations and dynamic tests as a functioning system. The company's unique one-year, 100% parts/labor warranty is indicative of its confidence in the performance and quality of its products.

### **Single-User Systems**

**Advanced Digital** introduced the first S-100 microcomputer system to incorporate a single board computer. This innovative concept made it possible to free several slots in the motherboard and permit cost-effective system expansion without the need for an expansion chassis. The single-user systems will run under CP/M 2.2, CP/M 3.0, CP/M 86, and MS DOS Operating Systems (8-bit and 16-bit, respectively).

### **Multi-User Systems**

In keeping with its tradition of leading the microcomputer technology, **Advanced Digital** was instrumental in creating industry awareness and acceptance of the MASTER/SLAVE multi-processor, multi-user concept. **Advanced Digital** introduced the SUPER SLAVE, a single-board processor containing a 4 or 6MHz CPU, 64 or 128KBytes of RAM and Serial and Parallel I/O in 1981. When used with a Master CPU such as the SUPER QUAD, SUPER SIX, or SUPER 186, the SUPER SLAVE provides a simple and cost-effective method of adding users to the system.



### **A Complete Product Line**

**Advanced Digital** offers an expanding line of single and multi-user, multi-processing S-100 based computer systems. The systems come complete with attractive cabinets, power supplies, and 6 to 12 slot motherboards. They are available in a wide selection of configurations: from 4 to 8MHz CPU's; with up to 1MByte of on-board RAM; in 8-bit or 16-bit technology; with Serial and Parallel I/O; combinations of floppy and hard disk mass storage devices; and with up to 10 user capabilities.

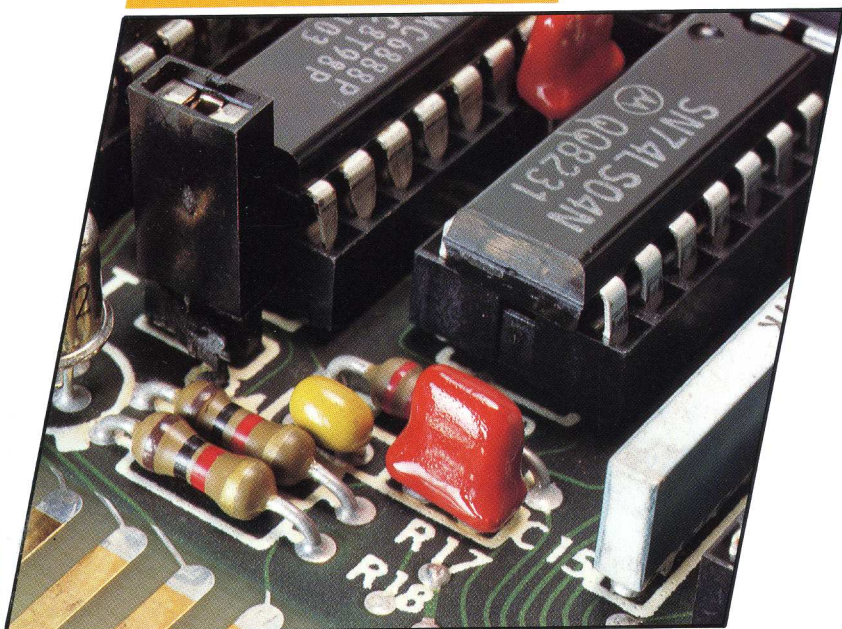
**Advanced Digital** also manufactures a broad line of single-board computers and controllers in a wide range of capabilities. Included are the 8-bit, 4MHz SUPER QUAD and 6MHz SUPER SIX single-board computers, the 16-bit, 8MHz SUPER 186 single-board computer, 4 and 6MHz, 8-bit SUPER SLAVE processor boards, and the HDC-1001 Hard Disk Controller.

**Advanced Digital** has just the system or single-board computer you need to meet the most demanding customer requirements.



# Super System II...

*the first S-100 8-bit/16-bit multi-processor,  
multi-user computer system!*





**Advanced Digital** enhanced its reputation for innovation and industry leadership with the advent of the SUPER SYSTEM II; the first 10-user, multi-processor, S-100 microcomputer system offering simultaneous operation of both 8-bit and 16-bit software packages. Offering speeds up to 8MHz and computing power that surpasses DEC PDP-11/45 type minicomputers, SUPER SYSTEM II is the least expensive multi-user, multi-processing microcomputer available today.

Utilizing **Advanced Digital's** SUPER QUAD 8-bit CPU, the fully integrated system runs under CP/M 2.2 for single-user applications or TurboDOS for multi-user, multi-processor installations. This enables users to gain access to a vast library of more than 3,000 applications programs.

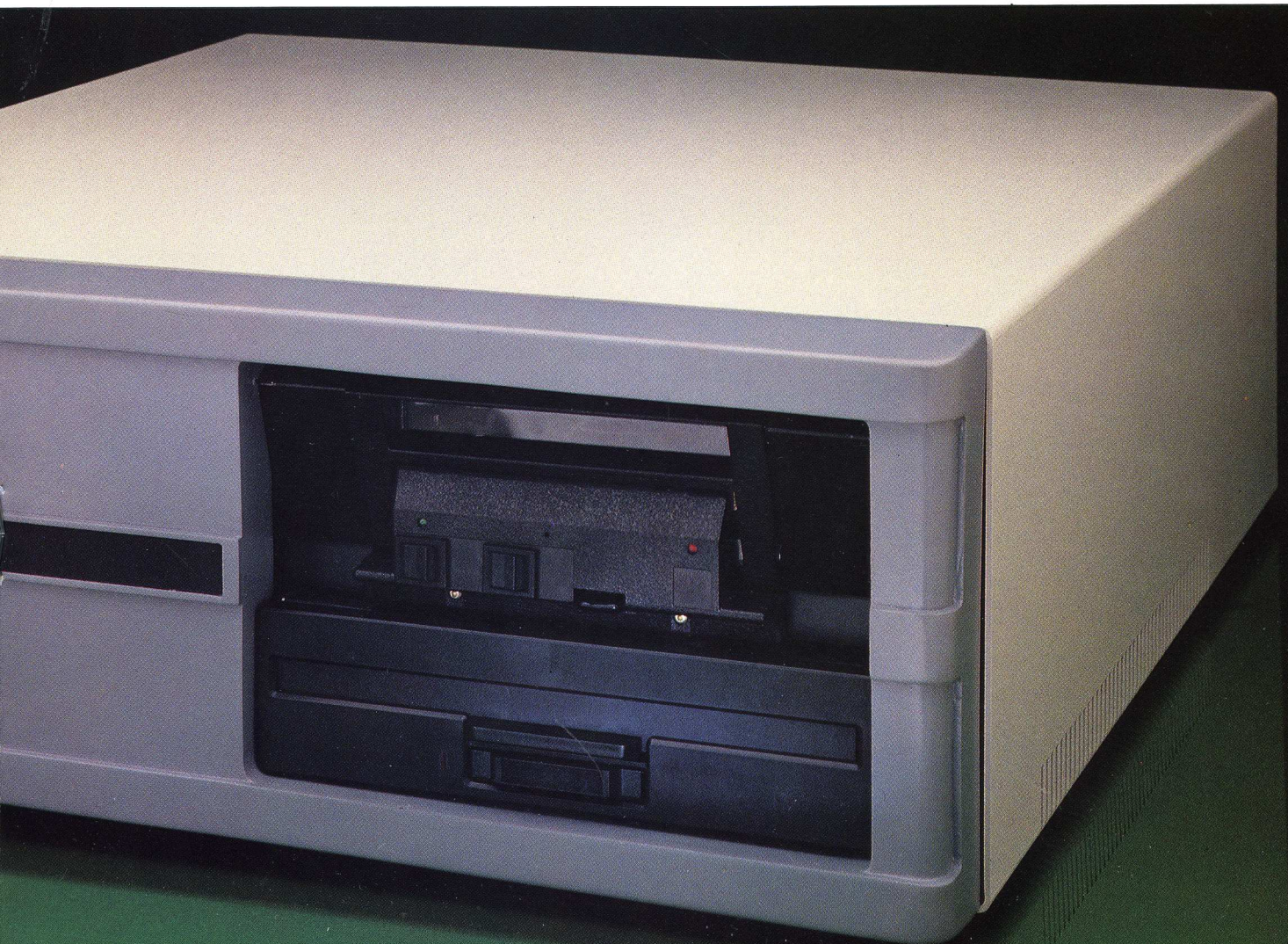
When equipped with **Advanced Digital's** new SUPER 186 as the bus master, the SUPER SYSTEM II becomes a high speed (8MHz), 16-bit multi-user system. The SUPER SYSTEM II can function as a 16-bit computer (SUPER 186 16-bit slave boards), an 8-bit computer (SUPER SLAVE 8-bit slave boards), and as an 8-bit/16-bit computer performing simultaneous multi-tasking oper-

ations of both 8-bit and 16-bit programs under TurboDOS 1.3.

By incorporating both 8-bit and 16-bit processing capabilities, SUPER SYSTEM II offers an attractive price/performance ratio and makes multi-user, multi-processor capability available to a much wider audience.

Standard features include:

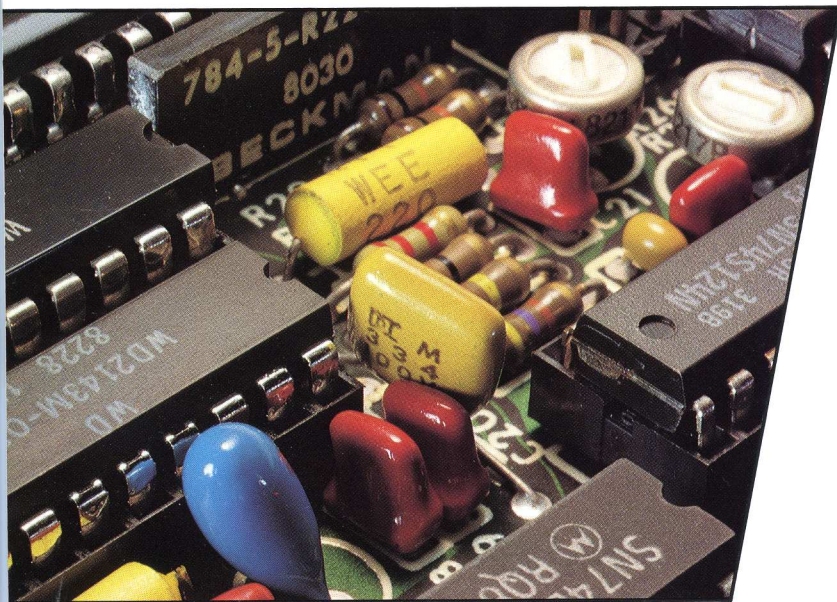
- IEEE 696, S-100 Compatible
- 12-slot motherboard
- Up to 10 users
- 5¼", 5 MByte removable Hard Disk Cartridge
- 5¼", 20 MByte Winchester disk drive (expandable to 60 MBytes)
- 8", half-high, double sided, double density floppy disk drive
- CP/M 2.2 Operating System standard, CP/M 3.0 and TurboDOS optional
- One year, 100% parts/labor warranty





# Super Star...

the first S-100 computer with a  
5MByte removable Winchester cartridge



**Advanced Digital's** SUPER STAR 4-user, multi-processor, S-100 computer is the first of a family of systems to be equipped with a 5¼" 5MByte removable cartridge Winchester disk drive as standard. The hard disk drive provides the capacity of up to 50 floppy diskettes with the speed and convenience of 100% backup using the 5MByte cartridge.

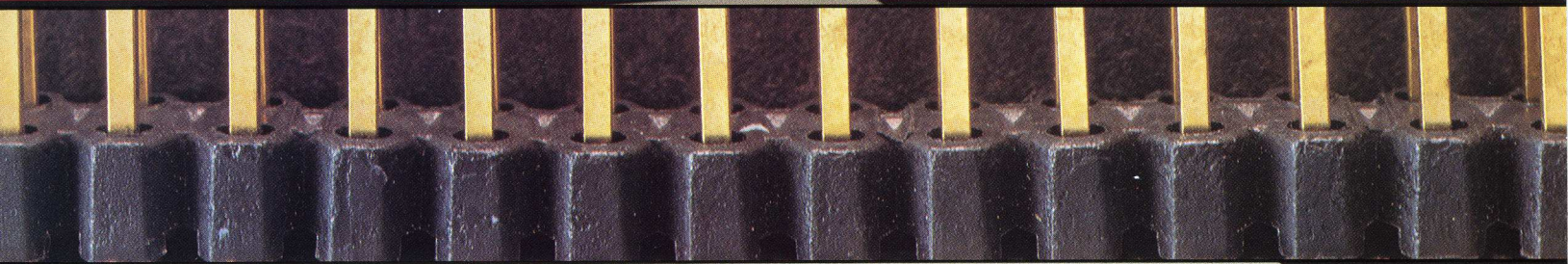
SUPER STAR is the ideal system for stand-alone and multi-user business, professional and educational applications. Its CP/M Operating System provides access to a vast library of readily available application software programs. The six-slot motherboard offers plenty of room for expansion.

Adding more users is easy. Simply plug in an **Advanced Digital** SUPER SLAVE processor board for each user (up to 4 users) and install the TurboDOS Operating System. The TurboDOS System is used because its unique architecture of "building block" modules can be combined to produce a family of compatible operating systems including single task, multi-task, and networking. **Advanced Digital's** implementation of TurboDOS includes an advanced failure detection and recovery facility that makes the Master/Slave network virtually crashproof.

The SUPER STAR's outstanding features include:

- New slim-line cabinet
- 5¼", 10MByte Winchester disk drive, 5MByte fixed, 5MByte removable cartridge
- 5¼", half-high floppy disk drive
- Six-slot motherboard
- Up to 4 users with SUPER SLAVES and TurboDOS
- CP/M 2.2 Operating System standard





## **D**ocumentation

## **S**ervice

## **W**arranty

### **Advanced Digital is dedicated to support**

At **Advanced Digital**, support is more than just a word. We are dedicated to providing the most complete support programs available.

#### **Documentation**

**Advanced Digital's** board level microcomputers are all supported by professionally-prepared, exceptionally comprehensive, easy-to-follow documentation packages. These include hardware and software user's guides, including engineering drawings and current application notes.

#### **Service**

Centralized repair service, for both warranty and out of warranty repairs, is available through **Advanced Digital's** Huntington Beach, California service center. International repair service is currently available through the Huntington Beach, California service center.

#### **Warranty**

All **Advanced Digital** board level microcomputers are protected by a one year, 100% parts/labor warranty.

®Registered trademark of Phase One Systems

®Registered trademark of Digital Research

™Trademark of Software 2000



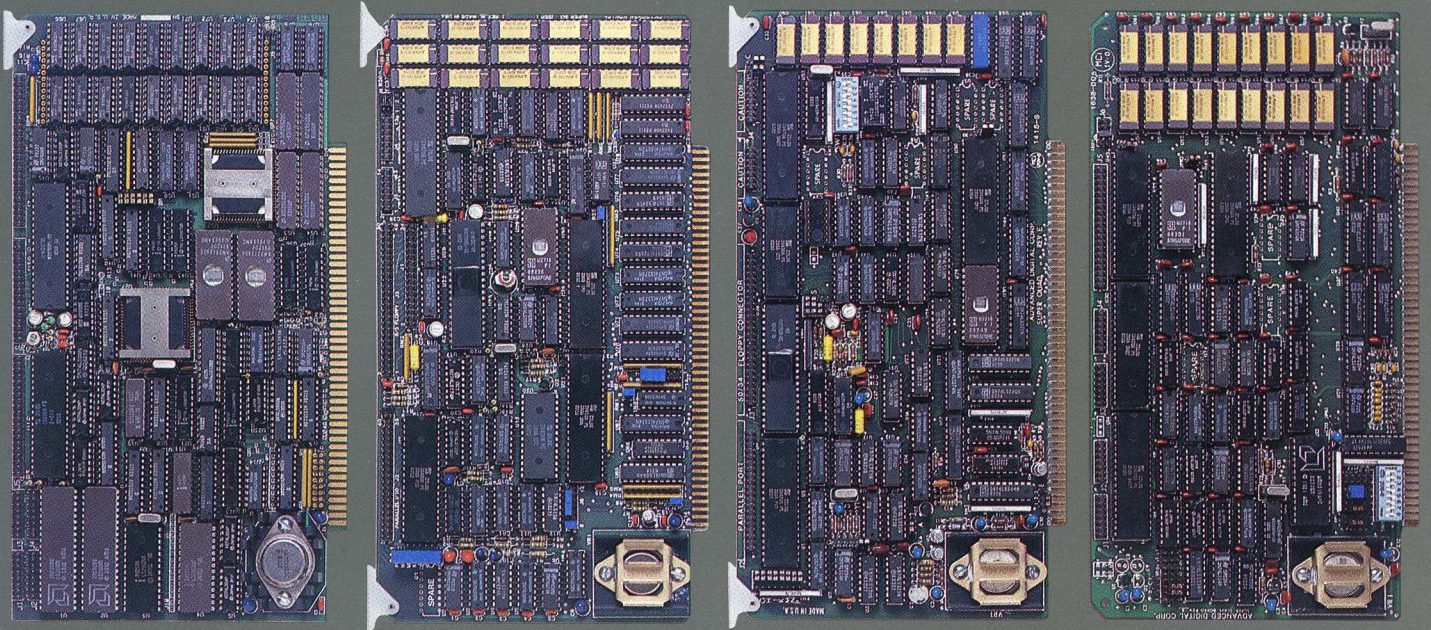


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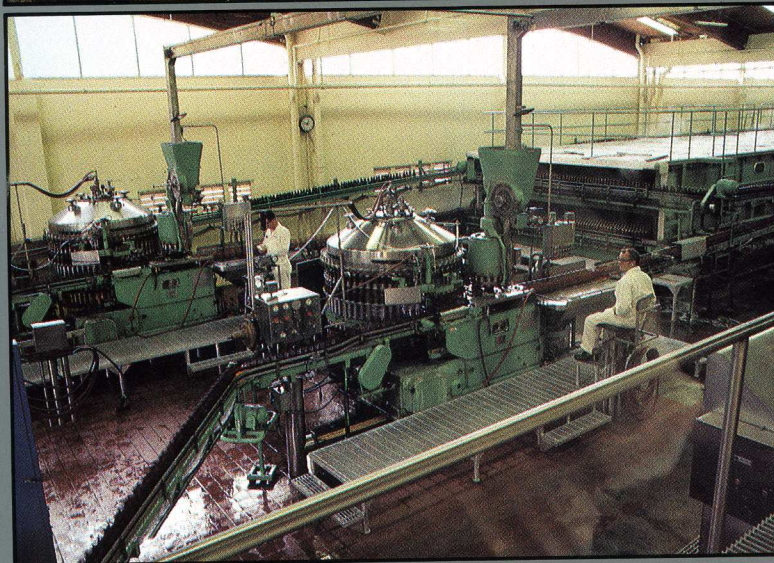
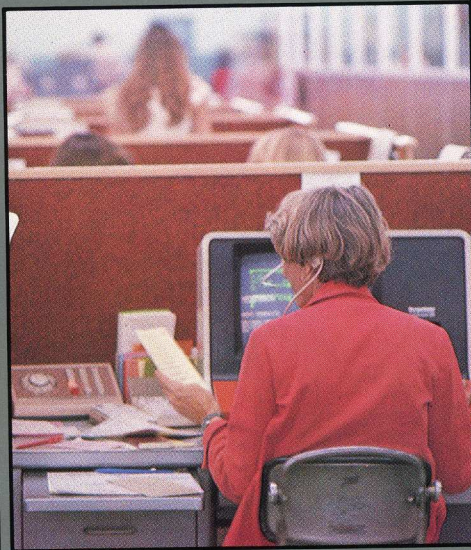


*Leading the  
microcomputer  
technology*



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**E**ach **Advanced Digital** system is designed and manufactured with only high quality, extremely reliable components to meet the most demanding customer requirements and varied applications. **Advanced Digital** products are at work in a variety of business, professional, and industrial fields ranging from medicine to electronics.



# Putting the microcomputer to work

Over the next decade, virtually everyone will be affected by the microcomputer as they go about their daily lives. Our children will become computer-literate in elementary schools, our banking and shopping habits will be affected, we'll be working in automated factories or computerized offices of the future. Even our health care will be controlled by computers.

Of course, the microcomputer will have the greatest impact on the way we do business. Every company that expects to stay competitive will put microcomputers to work... not only to increase productivity but to conserve valuable energy resources. These same companies will also employ more and more people who understand and can apply microcomputer power to their work.

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## **Advanced Digital makes it easy**

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How you add microcomputer power to your products requires a choice of entry point: anywhere from designing and manufacturing your own boards from the component level up to buying a complete packaged system. The key is volume. If you will require large quantities of systems, the highest return on investment will undoubtedly be in using off-the-shelf, board-level products from **Advanced Digital**.

**Advanced Digital** makes it easy by providing you with a complete product line of S-100 compatible single-board microcomputers and controllers. Choose from a variety of processor speeds (4, 6, or 8MHz), single or multi-user configurations, and 8-bit or 16-bit technology. The company's unique one-year parts/labor warranty is indicative of its confidence in the performance and quality of its products.

### **Single-user, Single Board Computers**

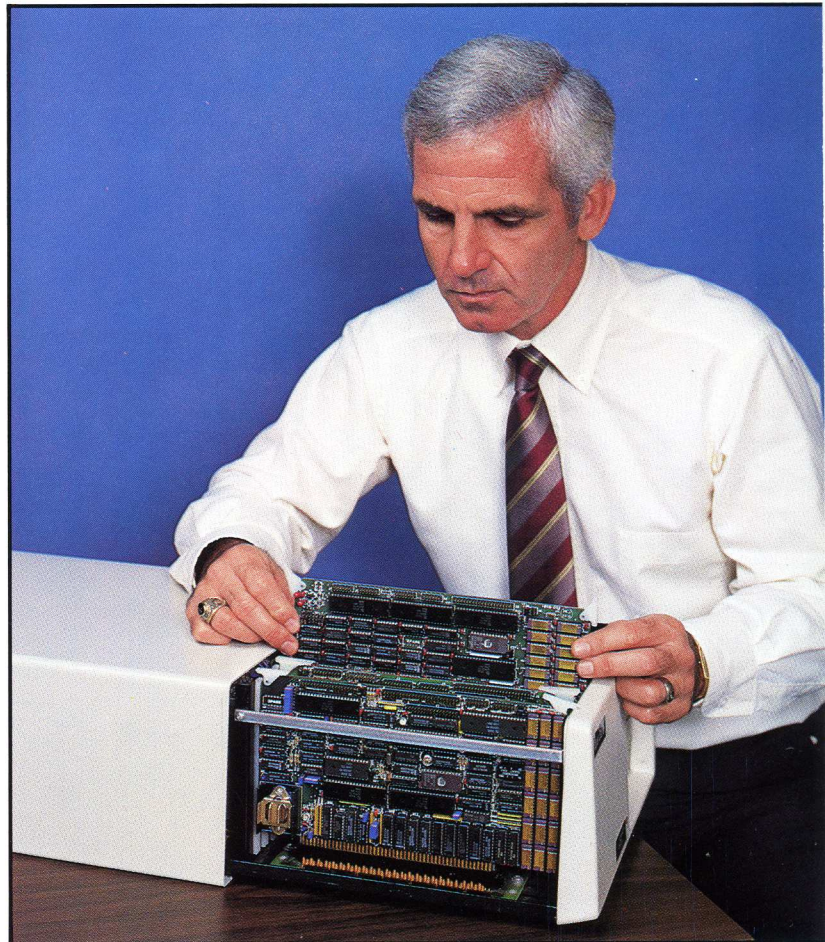
**Advanced Digital** has assembled a virtual supermarket of single user, single board S-100 microcomputers. They are available in 4, 6, or 8MHz speeds, with 64, 128, or 256KBytes of RAM, expandable to 1 MByte, and a variety of Serial and Parallel I/O ports, disk controllers and other outstanding features. All single user, single-board computers are fully compatible with the CP/M, MP/M, TurboDOS, OASIS, and MS DOS Operating Systems.

### **Multi-user, Single Board Computers**

As a pioneer and leader in multi-processor, multi-user technology, **Advanced Digital** was instrumental in creating industry awareness and acceptance of the MASTER/SLAVE concept. In 1981, **Advanced Digital** introduced the SUPER SLAVE processor board. The SUPER SLAVE board contains a 4 or 6MHz CPU and its own RAM (up to 128KBytes). Thus, each user has his own computer and only shares the disk I/O. The addition of another user (slave board and terminal) does not slow down the computer processing time. The multi-processor, multi-user systems utilize the TurboDOS Operating System.

### **8-Bit and 16-Bit Single Board Computers**

Depending on your application, **Advanced Digital** has just the right single-board computer for you. To meet your 8-bit requirements, you can select the SUPER QUAD, a



4MHz, 64KByte computer with many outstanding features, or the high-speed SUPER SIX, an exciting 6MHz computer with 128KBytes of bank selectable RAM.

In keeping with its tradition of being first, **Advanced Digital** was the first to introduce a 16-bit, single board, S-100 computer. Based on the Intel 80186 16-bit microprocessing chip, the new SUPER 186 is extremely fast (8MHz) and comes with 256KBytes of RAM that can be expanded to 1 MByte.

### **Complete S-100 Compatible Systems**

**Advanced Digital** has added a growing line of single and multi-user, multi-processor computer systems. The systems come complete with stylized cabinets, power supplies, and 6 to 12-slot motherboards. Available in a wide selection of configurations: from 4MHz to 8MHz, with up to 1 MByte of on-board RAM; in 8-bit or 16-bit technology; with Serial and Parallel I/O; combinations of floppy and hard disk mass storage devices; single or multi-processor capability; the systems can accommodate from one to ten users. **Advanced Digital** is committed to leading the microcomputer technology.



# Single board computers for the 80's and beyond



## The new Super-186 ... A 16-bit single board computer

Now, with the introduction of the Super-186, there is a single board, 16-bit, S-100 computer that will let you sail through those large computations at twice the speed of older technologies. You'll be able to take advantage of vast libraries of sophisticated application software and enjoy the power, speed, flexibility of 16-bit technology.

**Advanced Digital** is pleased to introduce its exciting, new Super-186, a high-speed 16-bit single board S-100 computer that represents the latest in state-of-the-art technology. Utilizing the powerful INTEL 80186 microprocessor chip, **Advanced Digital** has designed the SUPER-186 as a compact, 8MHz, 16-bit computer with performance and reliability characteristics far in advance of any other system available today.

Super-186 comes complete with an impressive list of standard features and options.

These features include:

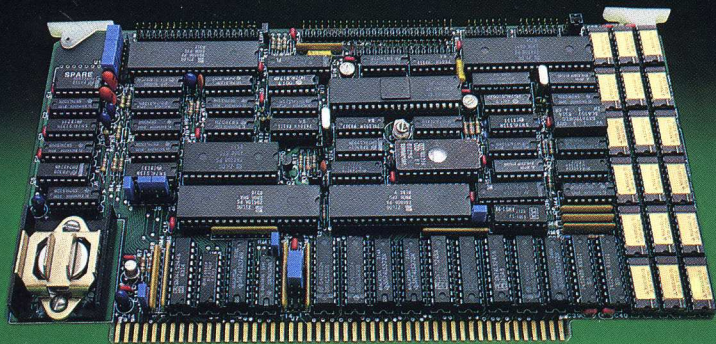
- S-100, IEEE-696 compatible
- 8MHz, 16-bit, 80186-based CPU
- 256KBytes of bank selectable RAM, with parity
- Four Serial I/O ports
- Two Parallel I/O ports
- Floppy disk controller with simultaneous operation of 8" and 5 1/4" drives
- DMA controller with two independent high speed channels
- Three uncommitted counters/timers
- CP/M-86, TurboDOS, and MS DOS operating systems
- Circuitry configured for software controlled interrupt generation
- RAM expansion to 1 MByte, with parity

Optional features include:

- Clock calendar\*
- Battery Back-up\*
- Math coprocessor\*

\*available soon





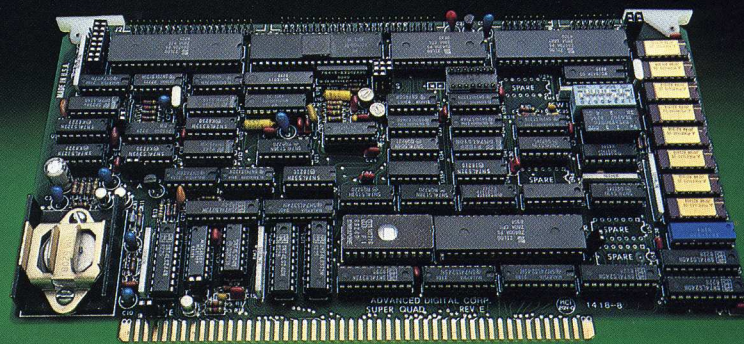
## **Super Six... the high speed 8-bit single board computer**

**Advanced Digital's** high speed (6MHz), single board S-100 based Super-Six computer is the most powerful 8-bit computer system available today. It increases the speed and performance by up to 1½ times faster than other systems currently available. A complete computer on a single board, the Super-Six enhances system expansion by making available at least one extra slot on the motherboard.

With 128KBytes of bank selectable RAM with parity as standard, the Super-Six is the only single board, S-100 computer that will run CP/M 3.0 (plus) in the banked mode and TurboDOS 1.3.

The Super-Six incorporates the following features:

- IEEE 696, S-100 Compatible
- 6MHz, Z-80B CPU
- 6MHz, Z-80B PIO, SIO (two RS-232 Serial, two Parallel)
- 128KBytes bank selectable RAM with parity
- 2K/4K monitor EPROM
- Floppy disk controller with simultaneous 8" and 5¼" drive operation
- Z-80 DMA controller
- CP/M 3.0 (plus), TurboDOS, CP/M 2.2, MP/M and OASIS operating systems



## **Super Quad... a complete S-100 system on a single board**

**Advanced Digital** introduced the Super Quad as the first 8-bit single board S-100 computer in 1980. Since then, the Super Quad has become the industry standard. Complete with on-board floppy disk controller that can support up to four 8" or 5¼" disk drives and 64 KBytes of bank selectable RAM, the Super Quad occupies only one slot instead of the 3 or 4 slots required by other so-called single-board computers. The Super Quad saves you money, space and power.

Outstanding features include:

- IEEE 696, S-100 compatible
- 4MHz, Z-80A CPU
- Floppy disk controller, single and double density, 8" or 5¼" disk drives
- 64KBytes of bank selectable RAM
- 2 Serial, 2 Parallel I/O ports
- 2K/4K of shadow EPROM
- Real time interrupt clock



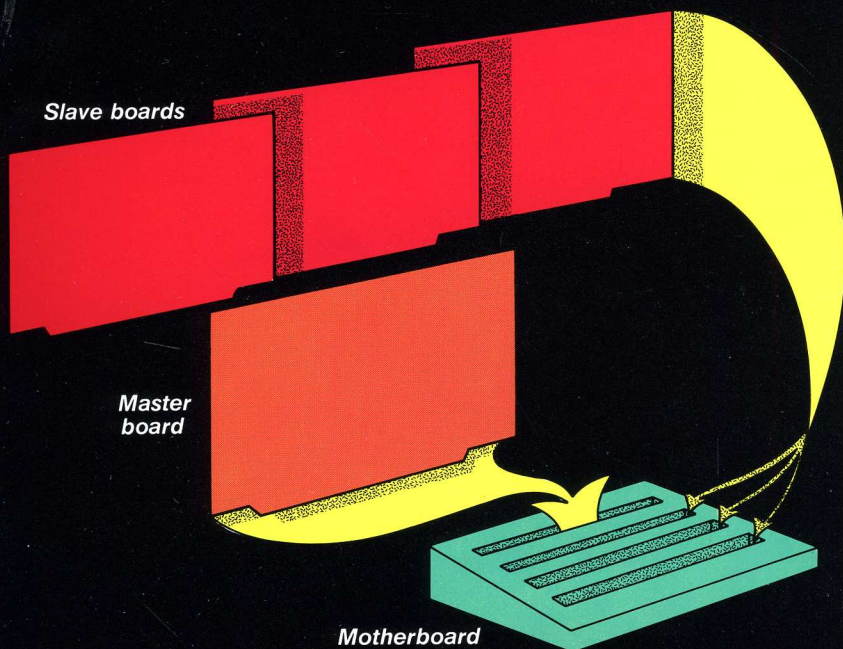
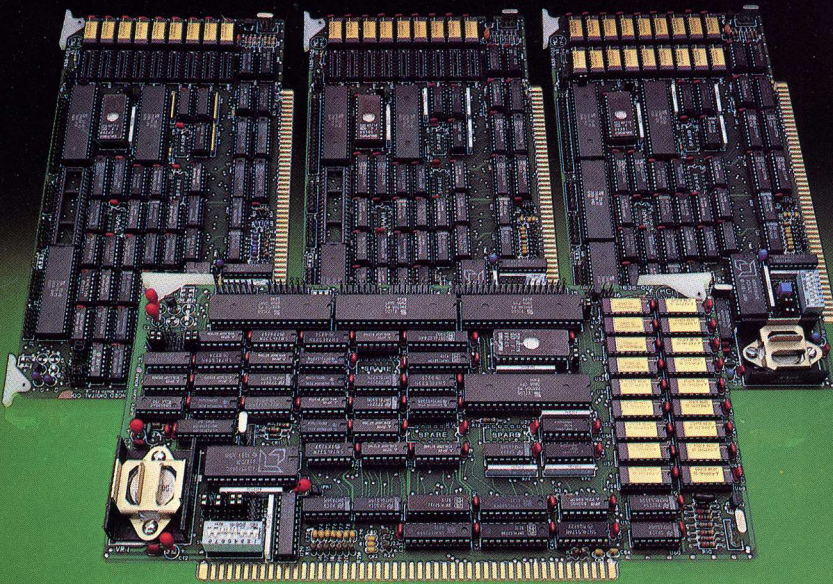
# Super Slave

the cost effective  
multi-user  
processor board

**Advanced Digital's** Super Slave is a powerful single-board processor designed to run in an S-100 environment. It is a complete computer and contains a 4 or 6MHz, Z-80 CPU, 64 or 128KBytes of bank selectable RAM, four Serial and two Parallel ports, and runs under the TurboDOS multi-user operating system.

When used in conjunction with a master CPU such as the Super Quad, Super Six or Super 186, the Super Slave provides a simple and cost-effective method of adding users to the system. Any number of slave boards (up to the limit of the motherboard) may be installed. Each slave provides its user with a dedicated CPU, with Serial and Parallel I/O and on-board RAM. Each slave is linked to the master, and thus to the disk I/O through the S-100 bus. The addition of multiple users does not have a detrimental affect on the system speed because only the disk access is shared. Each user functions as though he had his own computer.

The TurboDOS operating system is used because its unique architecture of "building block" modules can be combined to produce a family of compatible operating systems including single task, multi-task, and networking. **Advanced Digital's** implementation of TurboDOS includes an advanced failure detection and recovery facility that makes the master/slave network virtually crashproof.





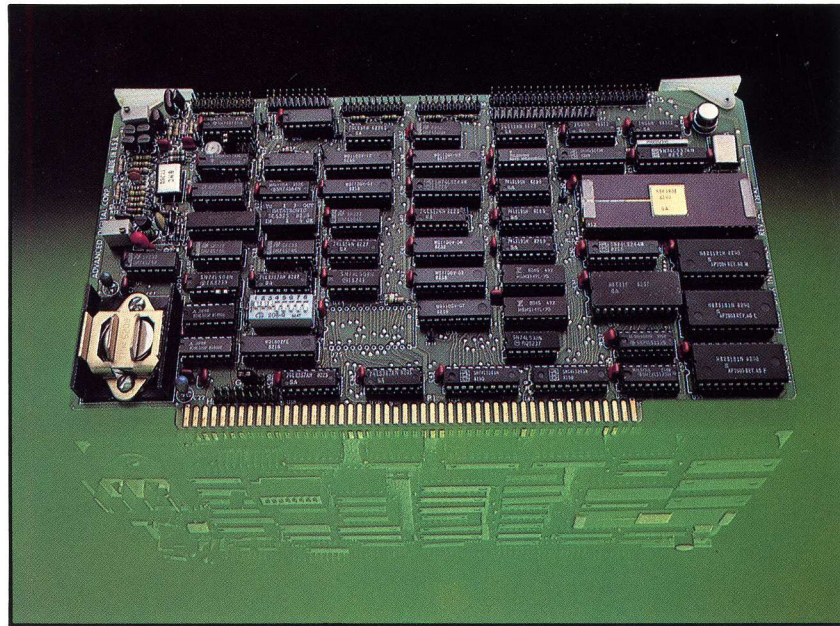
# Error correcting hard disk controller

The HDC-1001 Controller Board is the only microprocessor-based S-100 hard disk controller with error correcting capability (ECC). It is fully compatible with IEEE 696 and provides a compact, cost-effective way to operate up to four 8" or 5 1/4" disk drives.

The drive signals are based upon the floppy look-alike interface available on the Shugart SA1000, the Seagate ST506, Quantum Q2000 and other compatible drives. All necessary buffers and receivers/drivers are included on the board to allow direction to the drive. 34 and 50-pin connectors are provided to drive 8" or 5 1/4" drives.

Outstanding features include:

- Built-in data separator
- Data rates up to 5M bits/sec
- 1024 cylinder addressing range
- 256-512 sector addressing range
- CRC generation/verification on ID fields
- ECC generation/correction on data fields
- Automatic retries on all errors
- 32-bit computer generated polynomial
- Single burst correction, up to 8 bits
- Multiple burst detection
- Soft and hard sector interface



**D**ocumentation

**S**ervice

**W**arranty

## **Documentation**

**Advanced Digital's** board level microcomputers are all supported by professionally-prepared, exceptionally comprehensive, easy-to-follow documentation packages. These include hardware and software user's guides, including engineering drawings and current application notes.

## **Service**

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## **Warranty**

All **Advanced Digital** board level microcomputers are protected by a one year, 100% parts/labor warranty.

®Registered trademark of Phase One Systems

®Registered trademark of Digital Research

™Trademark of Software 2000





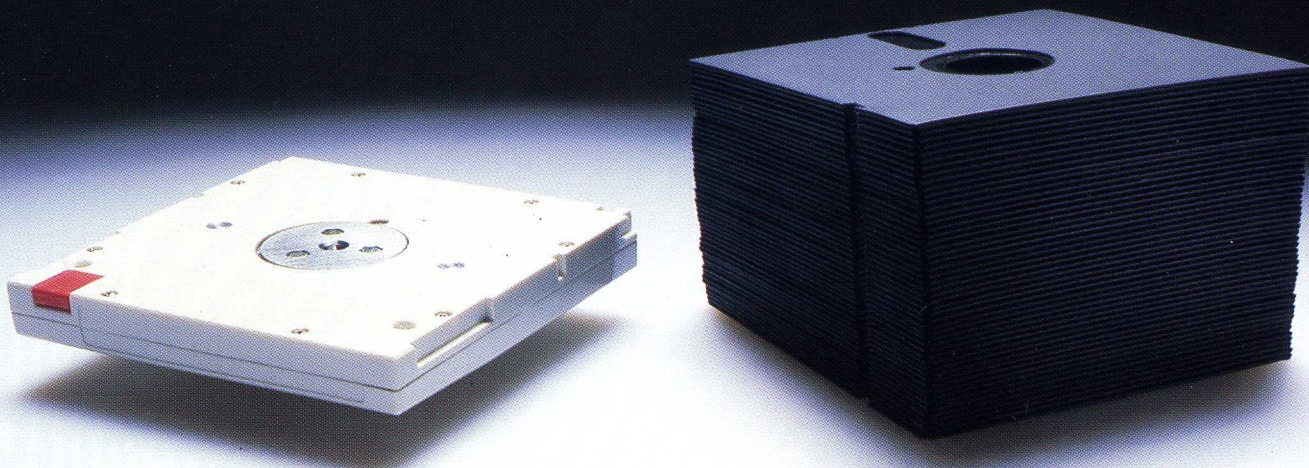
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# HOW DOES 1 = 50?

With SUPER STAR... The First S-100 Computer  
To Use a 5 MB Removable Cartridge.



Advanced Digital's new SUPER STAR™ is the first of a family of S-100-based computer systems to be equipped with a 5-1/4" 5-MB Fixed/ 5-MB Removable Cartridge Winchester disk drive (10 MB on-line storage capacity) as standard. Now you can have the capacity of up to 50 floppy diskettes and the speed and convenience of 100% backup using the industry-standard Dyan 5-MB cartridge.

SUPER STAR is the ideal system for business, professional, and educational applications. Its CP/M\* operating system (standard) gives you access to a vast library of readily available software programs. The six-slot motherboard allows plenty of room for expansion.

And as your business grows, SUPER STAR can grow with you. If you need more memory, just plug it in. SUPER STAR is based on the S-100 IEEE standard. To add more users, simply add Advanced Digital's SUPER SLAVE™ processor boards



and TurboDOS\* operating system. Now you've got an extremely powerful, multi-user, multi-tasking, multi-processing SUPER STAR computer system for up to four users.

SUPER STAR is truly a Super computer system. Look at these outstanding features:

- New Slim-Line Profile
- 5-1/4", 10-MB Winchester Disk Drive, 5-MB Fixed, 5-MB Removable Cartridge
- 5-1/4", Half-High, 48TPI Floppy Disk Drive (Osborne Format Compatible)
- Six Slot Motherboard

- Switch-selectable 110/220V Power
- Up to 4 Users With SUPER SLAVES And TurboDOS
- CP/M Operating System Standard
- One Year Warranty

SUPER STAR is the perfect system for applications requiring large data storage capacity, speed, performance, reliability, and dependable, convenient back-up capability. And at a suggested retail price of \$5,000, SUPER STAR is a SUPER VALUE.

See the entire Advanced Digital product line, including the new SUPER STAR, at your local, quality computer dealer or contact:



5432 Production Dr.,  
Huntington Beach, CA 92649  
Phone: (714) 891-4004  
Telex: 4722065 ITTSCSMA

For European Distributor, contact: (714) 891-4004

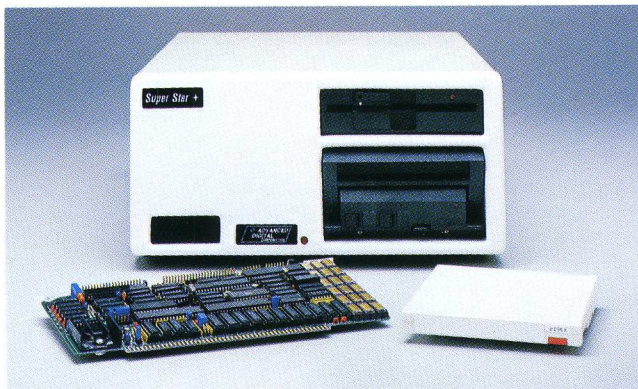
\*CP/M is a trademark of Digital Research Corp.  
TurboDOS is a trademark of Software 2000 Inc.

SUPER STAR, SUPER SIX, SUPER SLAVE are  
trademarks of Advanced Digital Corp.



# SHAPE UP IN THE SHAKEOUT.

When the shakeout in microcomputer boards and systems is over where will you be? To grow and prosper, you should be aligned with Advanced Digital Corporation: a technological leader in S-100 multi-user, multiprocessor system solutions.



**SUPER SIX.** The world's first and only 6 MHz Z80\* S-100 Single Board Computer. Available with TurboDOS\* and 128K of RAM, it is the only S-100 board that supports CP/M\* 3.0 (plus) in a banked mode, and TurboDOS 1.3.

**SUPER QUAD.** The single board computer that replaces traditional multi-board S-100 computers at a fraction of the cost. SUPER QUAD contains 64K bytes of memory, has 4 MHz Z80 CPU, and runs with CP/M, MP/M,\* CP/NET\* and TurboDOS.

\*Z80 is a trademark of Zilog, Inc.  
TurboDOS is a trademarked product of Software 2000, Inc.  
CP/M is a registered trademark, and MP/M and CP/NET are trademarks of Digital Research, Inc.  
SUPER SIX, SUPER QUAD, SUPER SLAVE, SUPER STAR, and SUPER SYSTEM II are trademarks of Advanced Digital Corporation.

**SUPER SLAVE.** For multi-user, multi-processing; a powerful single board slave processor, featuring 64/128K bytes of bank switched RAM. Multiple slaves in a system give a dedicated 4/6 MHz Z80 CPU to each user.

**HARD DISK CONTROLLER.** Micro-processor based, compact S-100 board with ECC. All buffers and receivers/drivers included for operating up to 4 drives (8" or 5 1/4", soft or hard sectored).

**SUPER 186.** The world's first 16-bit, S-100 single board computer based on the Intel 80186 features 8MHz and 256K bytes of RAM, expandable to 1 MB.

In addition to boards, we offer advanced micro systems. Our SUPER SYSTEM II and SUPER STAR multi-user, multiprocessor micros are class leaders. SUPER SYSTEM II with an S-100 single board computer, expandable to 10 users; SUPER STAR with the industry's first 5 MB fixed and 5 MB removable hard disk.

Best of all, we offer you third party maintenance and support, extremely competitive prices, terms, and an unconditional one-year warranty. Get yourself in shape for the shakeout with our S-100 line. Call or write Advanced Digital Corporation, 5432 Production Drive, Huntington Beach, California 92649; (714) 891-4004. TLX: 183210 ADVANCED HTBH.



**LEADING THE MICROCOMPUTER TECHNOLOGY.**



# THE MOVERS AND SHAKERS IN MODULAR MULTI-USER MICROS.



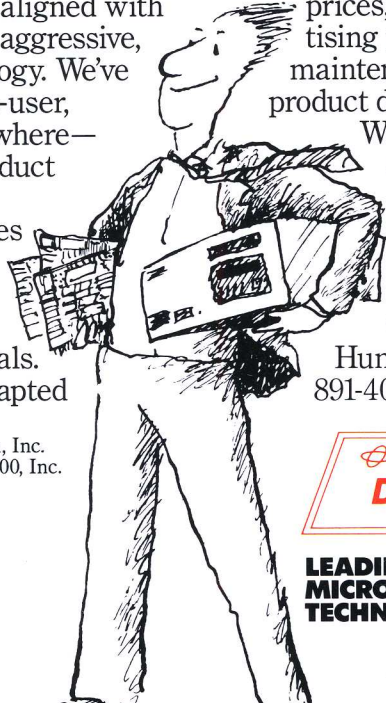
When the shakeout in microcomputer boards and systems is over, where will you be? To grow and prosper, you should be aligned with

Advanced Digital Corporation: the aggressive, marketwise leader in S-100 technology. We've got the most advanced line of multi-user, multiprocessor S-100 solutions anywhere—but it's going to take more than product to put you on top. You need higher profits, better terms, short lead times and liberal discounts. You need national advertising and promotion that pre-sells your customers and generates a steady stream of referrals. You need a program that can be adapted

to your local market needs and absolute assurance that maintenance and service won't just be your problem.

Ask for the Advanced Digital Dealer Support Package. It contains all the facts about our prices, profit margins, terms, co-op advertising programs, warranty and third party maintenance programs, plus complete product details on our modular S-100 products.

We've got the single board computers, slave cards, hard disk controllers, operating systems (including CP/M\* and TurboDOS\*) and the multi-user, multiprocessor systems that fit your growing needs. Advanced Digital Corporation, 5432 Production Drive, Huntington Beach, California 92649; (714) 891-4004. TLX:183210 ADVANCED HTBH.

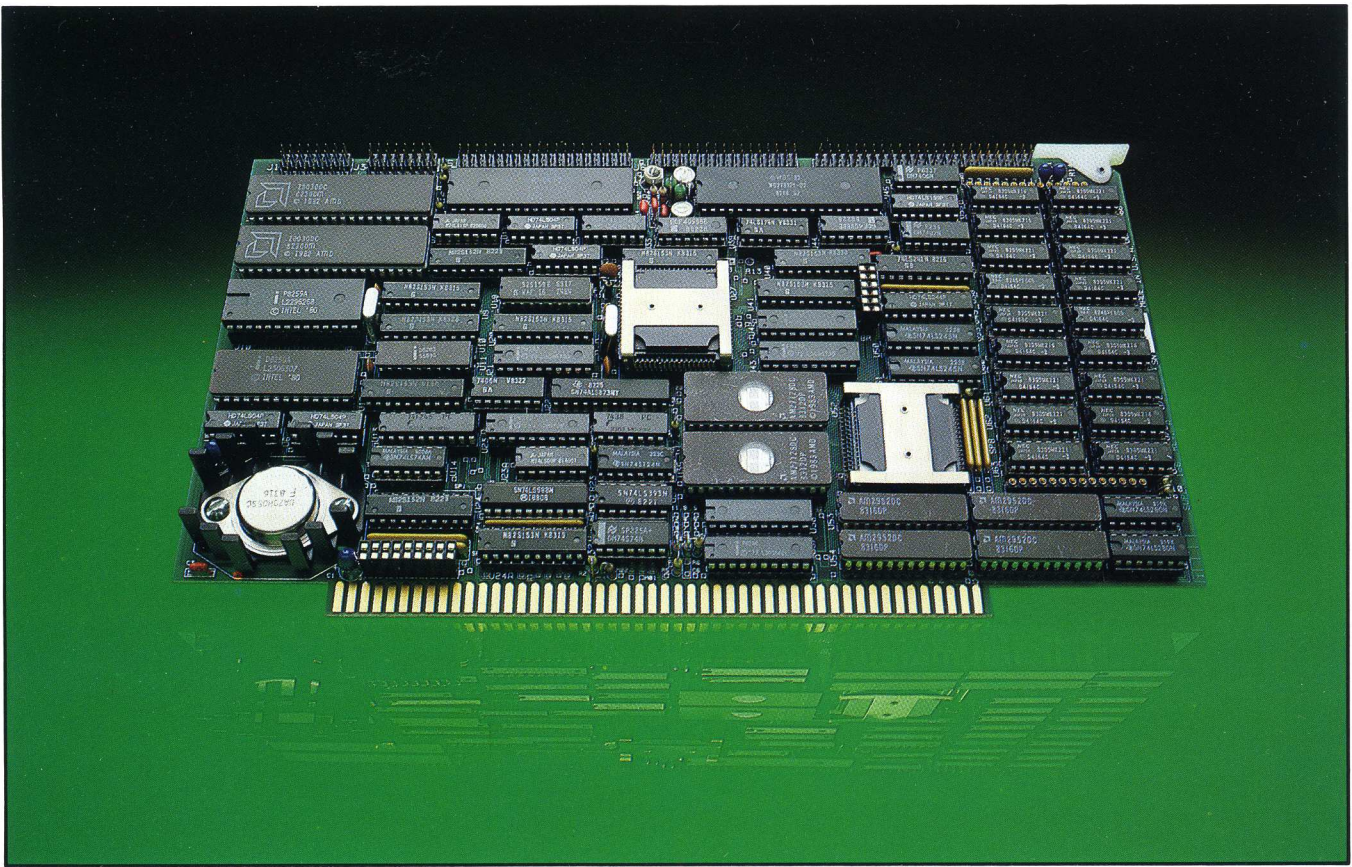


**LEADING THE MICROCOMPUTER TECHNOLOGY.**

\*CP/M is a registered trademark of Digital Research, Inc.  
TurboDOS is a trademarked product of Software 2000, Inc.

*Rejokman*





# Super 186

## The First High Speed 8MHz 16-Bit S-100 Single Board Computer

**Advanced Digital Corporation's** Super 186 high speed 16-bit single board S-100 computer represents the latest in the state-of-the-art microcomputer technology. The 8MHz INTEL 80186 CPU provides you with the power and speed you need to zip through large computations at twice the speed of older technologies. Now you can take advantage of vast libraries of sophisticated applications software and enjoy the depth and flexibility of 16-bit technology.

### Features:

- IEEE 696, S-100 Bus Compatible
- 16-bit INTEL 80186 CPU, 8MHz
- 80186 CPU directly addresses up to 1 MByte of RAM (no need for banking)
- 256KBytes of on-board RAM, expandable to 1 MByte
- Parity
- Up to 64KBytes Monitor EPROM
- 4 Serial RS-232 Ports
- 2 Parallel Ports
- Floppy Disk Controller with Simultaneous Operation of 8" and 5 1/4" Drives
- 2 Channel, High Speed DMA Controller
- 3 Uncommitted Counters/Timers
- Bus Master or Slave/Temporary Master Capability
- CP/M-86™, TurboDOS™, and MS DOS™ Compatible
- Clock Calendar, Battery Back-up, Dual Ported Memory, and Math Co-processor Options Available

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# Super 186

## The First High Speed 8MHz 16-Bit S-100 Single Board Computer

The SUPER 186 is designed to meet IEEE 696, S-100 Bus standards. It is the world's first 16-bit S-100 single board computer which will run as the 16-bit Master, or can be utilized as a slave board in a multi-user, multi-processing configuration.

### **Bus Master/Slave:**

By configuring on-board jumpers, the SUPER 186 becomes the Bus Master and will generate all the necessary signals to control the bus. Unique in the market, the SUPER 186 also features the ability to become a slave or "Temporary Master." The jumpers permit you to prioritize up to 16 Temporary Masters.

### **CPU:**

INTEL 80186, 8MHz microprocessor. **Advanced Digital's** proprietary on-board logic will automatically do a 16-bit transfer to an 8-bit device.

### **Floppy Controller:**

Uses WD2793 floppy disk controller and supports combination of 8" and 5¼" floppy drives in single or double density (sided) formats. This feature eliminates the 5¼" incompatibility problem. It is fully interrupt driven.

### **128KBytes RAM:**

Uses 4164 Dynamic RAM (no wait states). Use of expansion card doubles memory to 256KBytes. RAM is expandable to 0.5MByte without expansion card, 1MByte with the card. Parity check and generator is standard.

### **Parallel Port:**

ZILOG 8036 dual port with three independent, user-programmable counters/timers.

### **Serial Port:**

ZILOG 8030 two dual synchronous or asynchronous ports with up to 1 MByte/sec or 19.2 KByte/sec data rate, capable of SDLC/HDLC.

### **16K/Monitor:**

Two 2764 EPROM monitors, feature the ability to use 5V only EEPROM's, the ability to alter, modify, or add programs to monitor PROM, single cold boot routine, Memory Fill, Memory Move, Test, Test All, Dump, Input Byte/Word, Output Byte/Word, Read Sector From Floppy, Go To command, Change Registers, Sum and Difference of Two Addresses.

### **DMA:**

Two DMA channels are supported. One is dedicated to the floppy controller. The second is user-configurable and could be selected to DMA, one of three Serial ports (2, 3, or 4), or the Modem port.

### **Operating Systems:**

CP/M-86, TurboDOS, and MS DOS operating systems are available for single user, Master/Slave multi-user applications and permit access to an extensive library of sophisticated application software.

### **Options:**

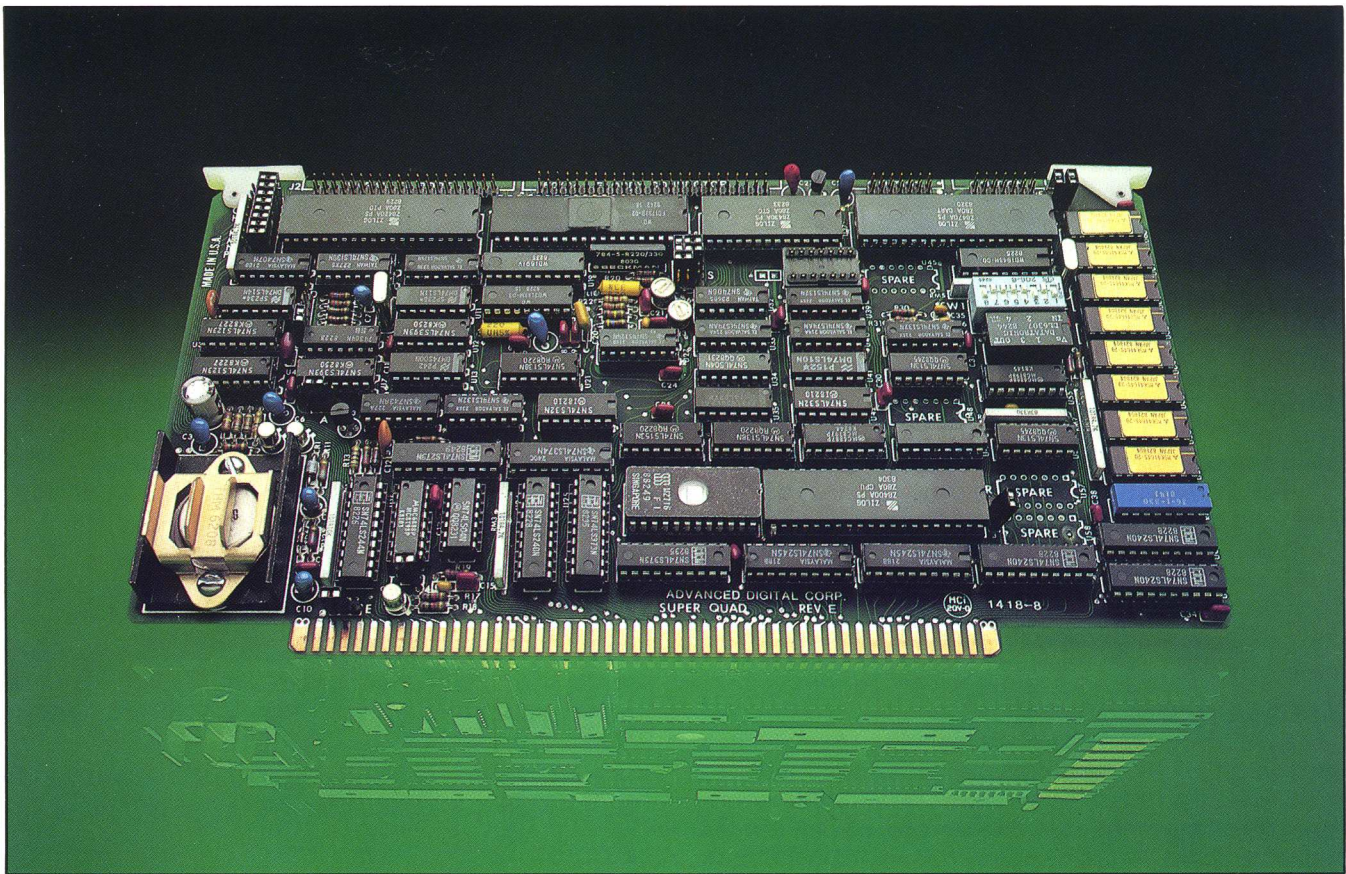
Real Time Clock, Clock Calendar with Battery Backup, and Math Co-processor. Dual Ported Memory, directly addressable from the bus with 16K or 64KBytes of storage.



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# Super Quad

The First Complete  
S-100 System on a Single Board

**Advanced Digital** introduced the Super Quad as the first 8-bit single board S-100 computer in 1980. Since then, the Super Quad has become the industry standard. Complete with on-board floppy disk controller that can support up to four 8" or 5 1/4" disk drives and 64 KBytes of bank selectable RAM, the Super Quad occupies only one slot instead of the 3 or 4 slots required by other so-called single-board computers. The Super Quad saves you money, space and power.

## Features

- IEEE 696, S-100 compatible
- 4MHz, Z-80A CPU
- Floppy disk controller, single and double density, 8" or 5 1/4" disk drives
- 64KBytes of bank selectable RAM
- 2 Serial, 2 Parallel I/O ports
- 2K/4K of monitor shadow EPROM
- Real time interrupt clock
- Unconditional one-year warranty
- Runs with CPM™, MPM™, CP/NET™, TurboDOS™
- All of the above features are on a single S-100 computer board





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# Super Quad

## The First Complete S-100 System on a Single Board

The Super Quad family of products is designed specifically to meet IEEE 696, S-100 Bus standards. It is the world's first complete S-100 system on a single board.

### **Ensured Reliability:**

While the Floppy Disk Controller\* port uses soft sector formats (IBM 3740) and accommodates sector sizes of 128, 256, 512, or 1024 Bytes, an enhanced Phase lock loop ensures the reliability of the recovered data. It also enables the board to run with CPM, MPM, CP/NET and TurboDOS operating systems. Data transfer is done by programmed I/O with wait and interrupt synchronization. Single density data rate is 250K Bytes/sec. Double density is 500K Bytes/sec.

### **64KBytes RAM:**

The 64K Bytes of Bank selectable memory can be switched on and off in 16K increments under software control. This allows the CPU to access bank switchable external memory on the S-100 bus. The memory has an access time of 200 NS. Refresh is done during Z80 MI Cycles and during wait and reset states. The memory can also be accessed by an external DMA device on the S-100 bus. As a Bank Select memory, you can also add additional Bank Select memories or any other S-100 boards to your system.

### **System Monitor:**

System Monitor EPROM is switched on during reset. It can be disabled and enabled under software control. It resides when enabled at F000 Hex to FFFF Hex. There are several very handy commands such as: disk boot, load, examine goto, test memory. When the Prom is disabled (shadow) it does not use any system address space. The Prom is also used for trouble shooting purposes.

### **CPU:**

Z-80A CPU is the heart of this board, running at 4 MHz.

### **Serial Ports:**

A Z-80 DART is used to accommodate two serial ports, also a Z-80 SIO can be used in its place for synchronous operations. Modem Control signals are available at each serial connector. There are two switch selectable Baud rate generators for Baud rates of 50 to 19.2K Baud.

### **Parallel Ports:**

A Z-80 PIO is used as the parallel port. The "A" channel of this device is connected to the parallel port connector. This port has 8 bi-directional data lines and two hand shake lines. The "B" port can be split between the parallel port connector and the S-100 bus vectored interrupt lines by jumper options.

In the output mode, the parallel ports can drive one TTL load, (external interface board is PS NET/PAR).

### **CTC:**

Real Time interrupt clock; A Z-80A CTC is used to provide a real time system clock for MP/M. Three channels of CTC are available to the user for strapping via a jumper header for synchronous baud rates on long clock times.



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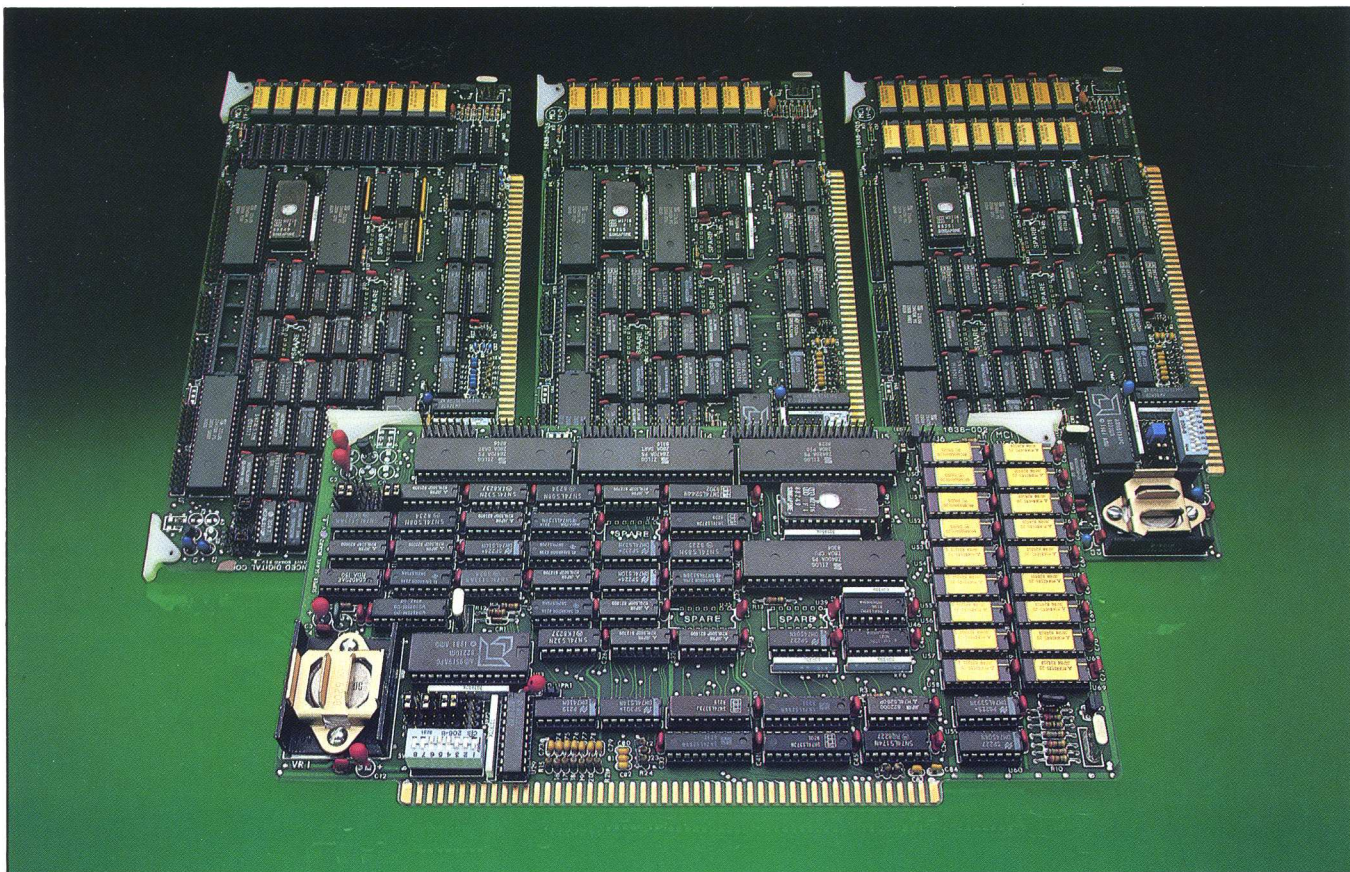
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# Super Slave

## The Powerful Single Board Processor For Multi-User, Multi-Processing Applications

**Advanced Digital's** Super Slave is a powerful single-board processor designed to run in an S-100 environment. It is a complete computer and contains a 4 or 6MHz, Z-80 CPU, 64 or 128KBytes of bank selectable RAM, four Serial and two Parallel ports, and runs under TurboDOS multi-user operating system.

When used in conjunction with a master CPU such as the Super Quad, Super Six or Super 186, the Super Slave provides a simple and cost-effective method of adding users to the system. Any number of slave boards (up to the limit of the motherboard) may be installed. Each slave provides its user with a dedicated CPU, with Serial and Parallel I/O and onboard RAM. Each slave is linked to the master, and thus to the disk I/O through the S-100 bus. The addition of multiple users does not have a detrimental affect on the system speed because only the disk access is shared. Each user functions as though he had his own computer.

### Features

- IEEE 696, S-100 bus compatible
- 8-bit, Z80 A/B CPU, 4MHz or 6MHz
- 64KBytes or 128KBytes of on-board RAM, bank selectable in 16KByte banks
- Parity
- 4 Serial RS 232 Ports
- 2 Parallel I/O Ports
- 2/4 KBytes of EPROM
- 2K/4K Bytes of Monitor
- Runs on TurboDOS™ operating system
- One year, 100% parts/labor, return to factory warranty

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# Super Slave

## The Cost-Effective Multi-User Processor Board

The Super Slave is a powerful single-board processor designed to run in an S-100 environment or in a stand-alone configuration. When multiple slaves co-exist within a system, computing power is a dedicated CPU (Z-80) to each individual user.

**Multiple Cards:**

As a slave processor, any number of Super-Slave cards may exist in a single S-100 system, by providing a dedicated Z-80 CPU to each user. Each slave is linked through the S-100 Bus to the master.

**Building Block Modules:**

The TurboDOS operating system is used because its unique architecture of "building block" modules can be combined to produce a family of compatible operating systems including single-task, multi-task, and networking. TurboDOS is a state-of-the-art operating system designed for use as a superior direct replacement for Digital Research CP/M or CP/NET.

**Failure Detection and Recovery:**

Advanced Digital's implementation of TurboDOS includes an advanced failure detection and recovery facility that makes a master-slave network virtually crashproof.

**Super Slave Configuration Chart**

MODEL	CPU	SPEED	MEMORY	MASTER BOARD INTERFACE
4/64	Z80A	4MHz	64kB	Super Quad, Super Six, Super 186
4/128	Z80A	4MHz	128kB	Super Quad, Super Six, Super 186
6/64	Z80B	6MHz	64kB	Super Quad, Super Six, Super 186
6/128	Z80B	6MHz	128kB	Super Quad, Super Six, Super 186



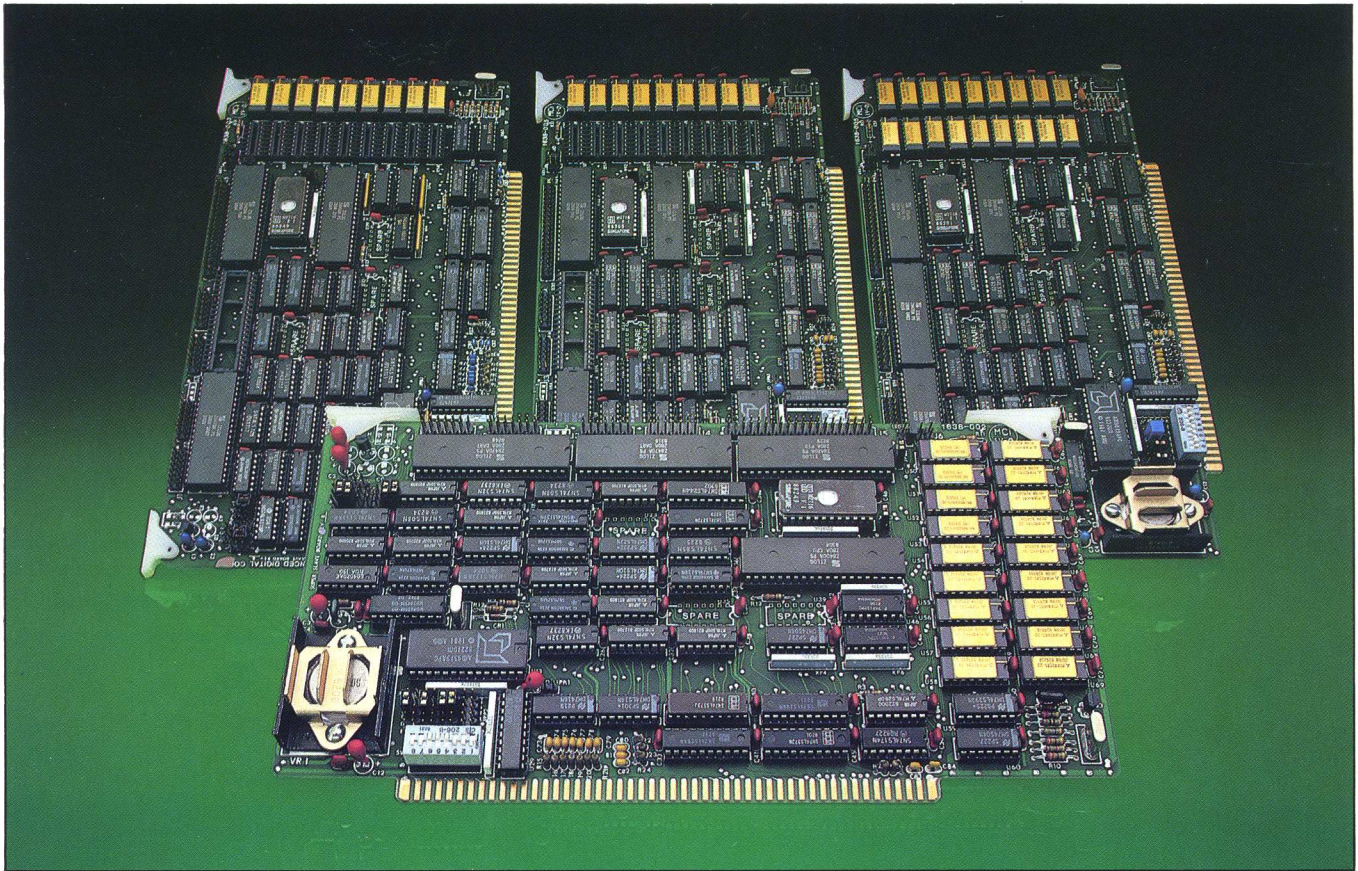
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### Features

- IEEE 696, S-100 bus compatible
- 8-bit, Z80 A/B CPU, 4MHz or 6MHz
- 64KBytes or 128KBytes of on-board RAM, bank selectable in 16KByte banks
- Parity
- 4 Serial RS 232 Ports
- 2 Parallel I/O Ports
- 2/4 KBytes of EPROM
- 2K/4K Bytes of Monitor
- Runs on TurboDOS™ operating system
- One year, 100% parts/labor, return to factory warranty

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4/128	Z80A	4 MHz	128 kB	Super Quad, Super Six, Super 186
6/64	Z80B	6 MHz	64 kB	Super Quad, Super Six, Super 186
6/128	Z80B	6 MHz	128 kB	Super Quad, Super Six, Super 186

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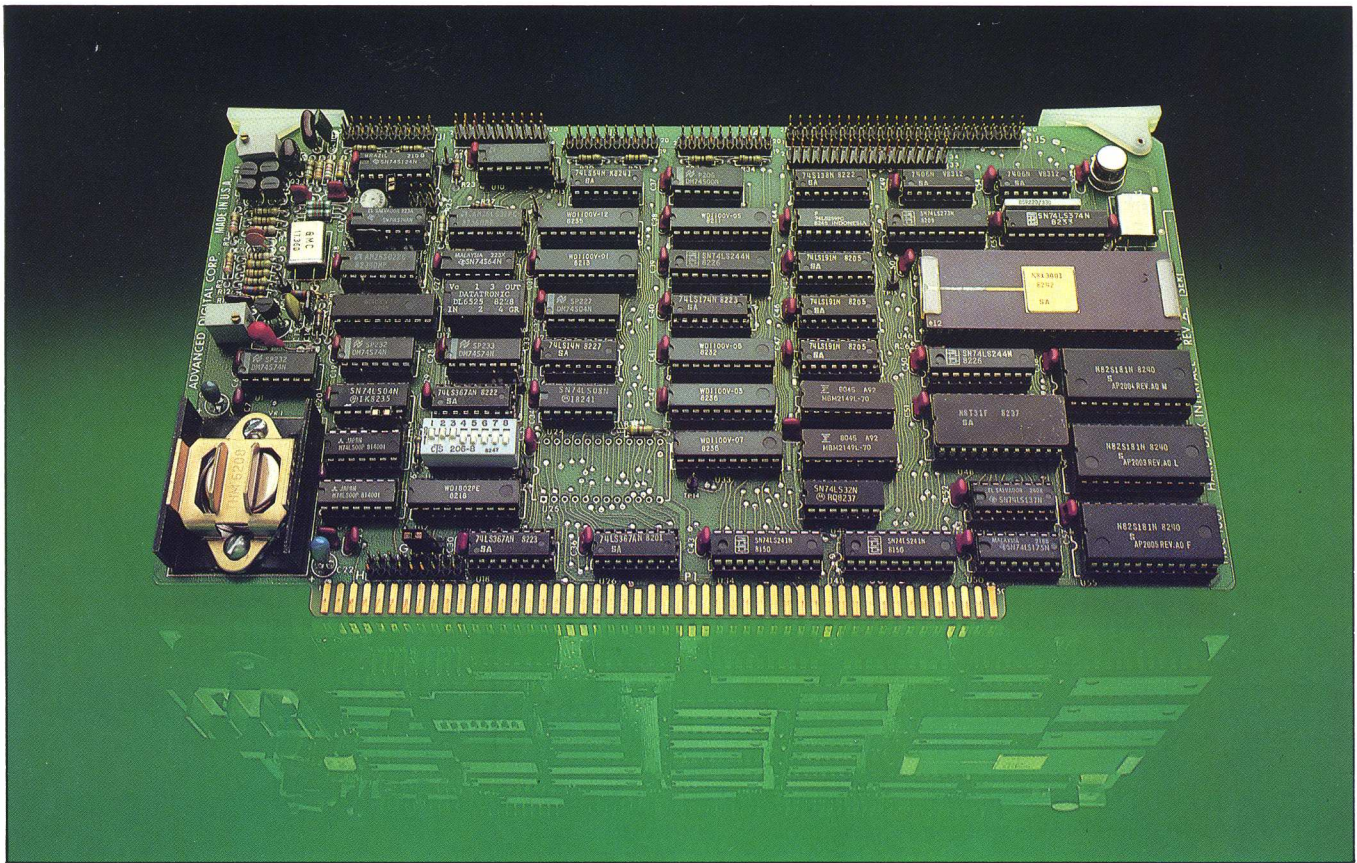
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# Hard Disk Controller

The Only One with Error Correcting  
and Hard/Soft Sector Capability

The HDC-1001 Controller Board is the only microprocessor-based S-100 hard disk controller with error correcting (ECC) and hard/soft sector capability. It is fully compatible with IEEE 696 and provides a compact, cost-effective way to operate up to four 8" or 5 1/4" disk drives.

The drive signals are based upon the floppy look-alike interface available on the Shugart SA1000, the Seagate ST506, Quantum Q2000 and other compatible drives. All necessary buffers and receivers/drivers are included on the board to allow direction to the drive. 34 and 50-pin connectors are provided to drive 8" or 5 1/4" drives.

## Features

- IEEE 696, S100 bus compatible
- Built-in data separator
- Data rates up to 5M bits/sec
- 1024 cylinder addressing range
- Controls up to 4 drives
- 256-512 sector addressing range
- Controls up to 8 heads
- CRC generation/verification on ID fields
- ECC generation/correction on data fields
- Automatic retries on all errors
- 32-bit computer generated polynomial
- Single burst correction, up to 8 bits
- Multiple burst detection
- Soft and hard sector interface





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# **H**ard Disk Controller

## The Only One with Error Correcting and Hard/Soft Sector Capability

Western Digital's 1100-X Chip Set is the heart of the hard disk Read/Write interface, CRC/ECC encoder and decoder, and serializer/deserializer. The Western Digital chip set, combined with the high-performance 8X305 controller and on-board sector buffer, the HDC-1001 Controller board provides the S-100 user with the best high density storage available. The controller permits error correction of up to 8-bits with multiple burst detection, 32-bit ECC polynomial, automatic restore and reseek on seek errors. The HDC-1001 also supports Read/Write and Short/Long formats.

### **SPECIFICATIONS:**

Encoding Method: MFM  
Cylinders per head: Up to 1024  
Sectors per track: Up to 256 (512 Bytes)  
Heads: 8  
Step rate: 10  $\mu$ s to 7.5 ms  
Data transfer rate: 4.34 M bits/sec (SA-1000, Q2000)  
5.000 M bits/sec (ST506)  
Sectoring: Soft  
Power requirements: +5v (3.A Max)  
Ambient Temp.: 0°C to 50°C (32°F to 122°F)  
Relative Humidity: 20% to 80%  
MTBF: 10,000 POH

It also supports Hard Sector Drives, DMA Systems, Cynthia & Syquest.

### **Existing Winchester Drive Interfaces**

<b>Quantum 2010</b>	<b>Seagate ST506</b>	<b>DMA 5R</b>
<b>Quantum 2020</b>	<b>Tandon TM 502</b>	<b>Maxtor 1065</b>
<b>Quantum 2040</b>	<b>Tandon TM 503</b>	<b>Maxtor 1140</b>
<b>Miniscribe 4020</b>	<b>DMA 515</b>	

Additional drivers are being added.  
Check for drives other than those listed above.

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