PRELIMINARY

The ACS8600 family

The new 16-bit micro system.

Another first from Altos . . . Minicomputer performance at a microcomputer price.

Why you should consider the ACS8600 family.

More power. The ACS8600 family is designed to perform larger, more complex tasks for more users. Larger word size allows the use of more powerful instructions and direct addressing of more memory. This means the system requires fewer instructions and fewer computer cycles to accomplish the same job. It also means that it can handle complex mathematical problems, large data base searches and other demanding applications in far less time.

Serving more users. Altos has pioneered the development of microcomputer-based multi-user systems. Our 8-bit ACS8000 series systems can perform a wide range of tasks for up to four users. As more users are added to the system and the tasks become more complex, a 16-bit computer may be required.

ALTOS
COMPUTER SYSTEMS

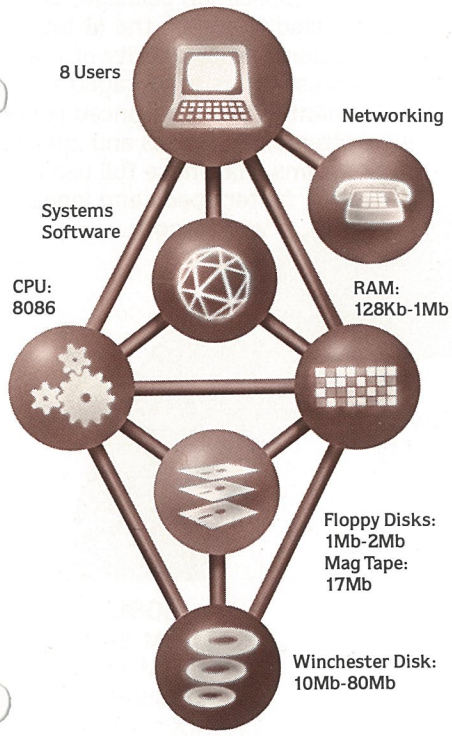
More powerful processing capability, bigger memory, and special memory management of the ACS8600 family extend multi-user capabilities. Up to eight users are served without long waits for service.

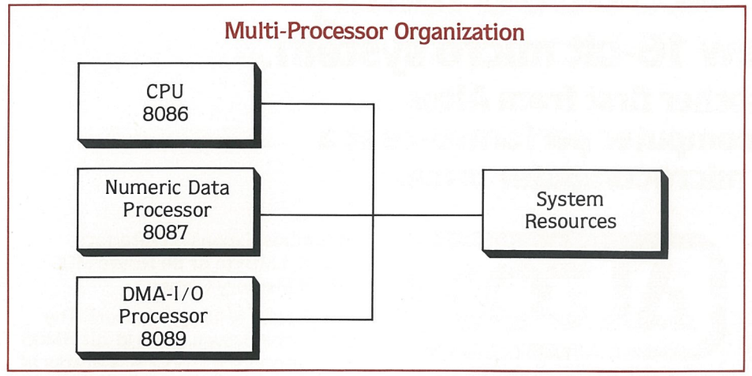
8086 16-bit multi-user features at an 8-bit system price.

- Multiple Processors.
- Direct Addressing to One Megabyte of Memory.
- Error Correction On Memory.
- Proprietary Memory Management Design.
- Full Communications Support
- Integrated Winchester/Floppy Data Storage.
- Multibus Expansion Interface.
- Up to 1 MByte of 64 KByte MOS RAM Memory Chips.

Powerful 16-bit processors. The CPU is the proven 8086 16-bit HMOS microprocessor. The CPU operates at twice the clock speed of the Z80—a fast 8 MHz. It can directly address one megabyte of memory. It uses assembly language compatible with the 8080/8085. It performs 8- and 16-bit signed and unsigned arithmetic in binary or decimal, including multiply and divide.

Multiple processors. The ACS8600 family uses more than one processor. While the 8086 serves as the master CPU, other "slave" processors are dedicated to special tasks. For example, a second processor handles direct memory access (DMA). An optional math processor handles math functions. While each processor is optimized for specific tasks, they





work together to share the workload for faster execution and response time.

Error correction. While even many mid-sized minicomputer memories lack Error Correction Code (ECC), the ACS8600 family improves operational reliability with its own ECC. The memory has full error detection for single and double bit errors and correction of single bit errors. This reduces system errors that can lock up a system, because memory contents have changed.

Unique memory management. The ACS8600 family uses a proprietary memory management system. It subdivides up to one megabyte of memory into 4 KByte blocks. It assigns a logical-to-physical address translation and various access attributes to each block so that non-contiguous physical memory can be assigned to any given task. This capability reduces the need to swap users or tasks out to disk. The result is that data base sorting and other tasks requiring large memory are performed faster. The system also provides write and access protection to increase reliability and performance.

Full communications support. The ACS8600 family supports asynchronous and synchronous protocols, provides networking facilities, and a high speed (800 KBits) communications port.

Integral data storage. The system accommodates 8-inch floppy disks (double density, single or double sided) as well as 8-inch Winchester hard disk drives for large capacity storage, I/O and backup. We've integrated our proprietary single board computer and disk drive controller with Winchester disks to give you a powerful system that can handle big data bases and serve four or more users. The faster speed and bigger capacity of Winchester allows you to take full advantage of high CPU speed.

Eight-inch Winchester hard disk systems. Our multi-user eight-inch hard disk systems give you from 128 KBytes up to a full megabyte of RAM memory and ten megabytes of ultra-reliable storage on Winchester hard disks with a choice of floppy (single or double-sided) or magnetic tape cartridge.

In addition, you can use up to two 8-inch Winchester hard disks to double your capacity.

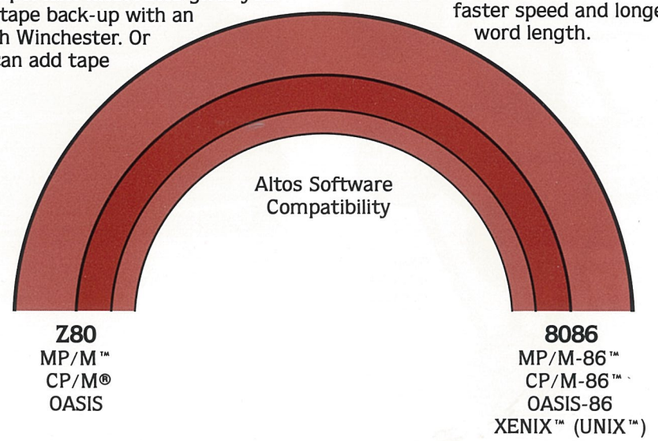
Magnetic tape cartridge back-up. Many users like transportable mag tape to provide back-up copies from the hard disk. It's low-cost insurance for important files. Altos gives you mag tape back-up with an 8-inch Winchester. Or you can add tape later with our MTU-1—a stand-alone magnetic tape cartridge back-up that can be added to any Altos hard disk system. All mag tape systems include complete mag tape back-up software.

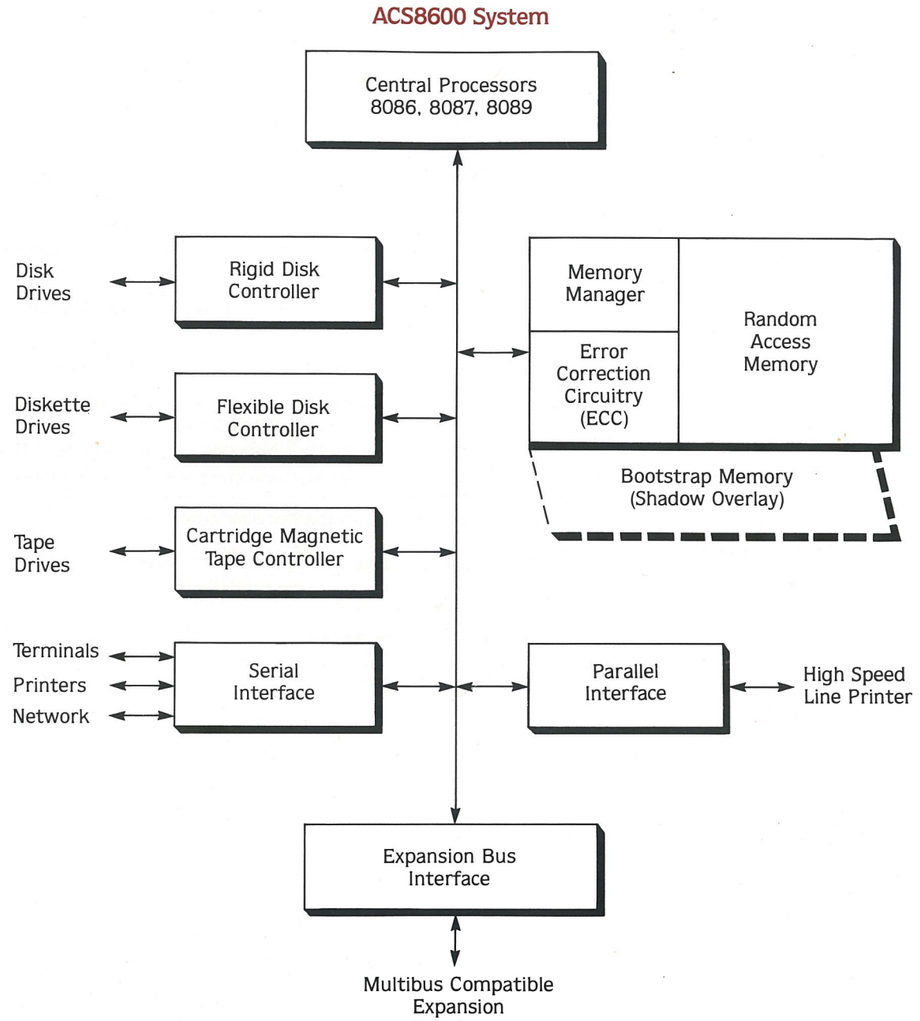
Additional storage. If you need more data storage, you can plug in one of three add-on storage modules —8-inch Winchester/mag tape cartridge, 8-inch Winchester/floppy, or mag tape cartridge/floppy. If you need still more, you can add a Multibus™ compatible expansion enclosure that permits interface to a Storage Module Drive (SMD) of up to 300 MBytes, or a 9-track tape for unlimited archival storage.

Multibus™ expansion interface. The Multibus compatible expansion port also allows expansion beyond standard peripherals to tailor the system to special requirements. For example, the user can add array processors, A-to-D or D-to-A converters, IEEE-488 bus interface, digitizer or digital relay boards.

Memory expansion. The basic ACS8600 family configuration includes 128 KBytes of RAM. Memory is expandable in 128 KByte increments to one megabyte.

Software. Although the ACS8600 family uses a 16-bit processor, it uses software compatible with the Z80. Most 8-bit application packages can be recompiled to run on the 16-bit configuration. The popularity of the 8086 processor has encouraged the development of more advanced operating systems, languages and application programs that make full use of faster speed and longer word length.





CPU—Intel 8086 16-bit HMOS Microprocessor

- Direct addressing capability to 1 MByte of memory
- Assembly language compatible with 8080/8085
- 8- and 16-bit signed and unsigned arithmetic in binary or decimal, including multiply and divide
- 8 MHz clock rate

Unique Altos Design Characteristics

- Multiple processor strategy:
  - —8086 CPU
  - —8087 (Optional) Floating Point Math Processor (5 MHz only)
  - —8089 DMA-I/O Processor for rapid movement of large data blocks
- Supports up to 8 terminals
- ECC—Error Correction Code
  - —Single bit correction
  - —Double bit detection
  - —Accomplished via LSI circuitry
  - —Self diagnostics capability
- Proprietary Memory Management Design
  - —Memory mapping in 4 KByte blocks
  - —Write protection
  - —Access protection
- Full communications support
  - —Asynchronous (Async)
  - —Synchronous (Bisync)
  - —Networking
  - —High speed (800 KBits) Communications Ports

Multibus Compatible Expansion Port

- Array processors
- A/D, D/A
- Tape interface (9 track)
- Hard disk controllers (SMD interface included)
- Bubble memory
- IEEE-488 bus interface
- Digitizer
- Digital relay boards

Multi-user 16-bit systems

	Floppy Disk	Hard Disk
Model	ACS8600-15	ACS8600-10 Family
CPU	8086 (8 MHz)	8086 (8 MHz)
RAM Memory	128 KByte-1 Mbyte	128 KByte-1 MByte
Users	1-8	1-8
Floppy controller density	Double	Double
Floppy drive type	Single/Double Sided	Single/Double Sided
I/O ports Serial Parallel	 2-12 24 Programmable Lines	 2-12 24 Programmable Lines
Number of drives Winchester Floppy	 (upgradable to up to 2 hard disk drives) 2	 Up to 2 hard disk drives 1-2
Total storage Winchester Floppy	 (upgradable to 10 MBytes-80 MBytes) 1 MByte-2 MBytes	 10 MBytes-80 MBytes 1 MByte-2 MBytes

NOTE: Stand-alone magnetic tape cartridge back-up can be added to any hard disk based system (Model MTU-1).

Winchester disk capacities are specified unformatted.

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