



## FEATURES

- ▲ High Performance Multiuser system supporting up to 32 users
- ▲ Powerful Intel 80286 microprocessor operating at 12.5 MHz with zero wait states out of cache
- ▲ 4 KB instruction and data cache memory
- ▲ Up to 8 MB RAM
- ▲ Up to 510 MB of internal mass storage with three 5.25 inch 170 MB ESDI disk drives
- ▲ Integral 60 MB 1/4-inch streaming tape drive
- ▲ Integral 1.6 MB Floppy disk drive
- ▲ Intel 8086-based File Processor Subsystem with ESDI disk controller
- ▲ Intel 80286-based Multidrop Communications Subsystem with 512 KB of on-board RAM
- ▲ Industry Standard XENIX® 3.0 operating system
- ▲ Wide range of communications support including LAN, Async, Bisync, SNA and X.25 protocols
- ▲ Remote Diagnostics support down to the Field Replaceable Unit
- ▲ Optional Floating Point Co-Processor





## O V E R V I E W

▲ The Altos 3086 is a high performance supermicrocomputer capable of providing support for up to 32 users. Based on the Intel 80286 microprocessor, the system operates at 12.5 MHz with zero wait states out of cache, and offers outstanding performance at a very economical cost per user.

Performance is further enhanced by intelligent file processor and multidrop communications boards. The standard system includes 4 MB of RAM and a 170 MB ESDI disk drive. Memory may be expanded up to 8 MB while internal mass storage may be expanded to 510 MB (unformatted) by adding two 170 MB ESDI disk drives.

The Altos 3086 is a truly outstanding system that offers both performance and flexibility in a state-of-the-art computer geared to provide solutions to modern office automation and commercial application requirements.

## H A R D W A R E

### ▲ *Main Processor*

The Altos 3086 is based on the powerful Intel 80286 microprocessor operating at 12.5 MHz with zero wait states out of the on-board 4 KB of data and instruction cache memory. For math intensive applications, an 8 MHz Intel 80287 Floating Point Co-Processor is available for even faster performance.

### ▲ *Memory*

Standard memory in the Altos 3086 is 4 MB, expandable to 8 MB in 2 MB, or 4 MB increments. This allows the user to tailor the system for specific requirements while providing a flexible upgrade path as needs change.

### ▲ *File Processor Subsystem*

This subsystem improves system performance by offloading processing of data to and from the mass storage devices and the Centronics parallel printer port. This Intel 8086-based file processor subsystem also includes an ESDI disk controller which can control up to three ESDI disk drives. With a transfer rate of 10 Mbps and support for overlapped seeks, the file processor subsystem minimizes the traditional I/O bottleneck found in many systems. The controller board also supports both a 1/4-inch streaming tape drive and a floppy disk drive.

### ▲ *Multidrop Communications Subsystem*

The Altos Multidrop product is designed to give the Altos 3086 the capability to support a large number of RS-232C devices on a single high speed communications port through one multidrop interconnect cable. The cable is made up of an inexpensive shielded, twisted copper pair. This design approach saves space on the communications boards, extends RS-232C connections beyond the traditional 125' distance limitations, simplifies cable runs, and reduces cabling costs.

The Multidrop Communications Board has its own 6 MHz 80286 I/O processor and 51KB of local RAM. It is capable of supporting up to 64 RS-232C devices (59 through the 1 Mbps interconnect cable and 5 through on-board ports). With 2 Multidrop boards, each Altos 3086 system can connect to over 100 separate devices. The Multidrop Communications Board comes equipped with a WorkNet port, for connectivity to the Altos WorkNet LAN, plus 4 serial ports (2 asynchronous/synchronous protocol ports and 2 asynchronous only ports). The XENIX Operating System provides throughput and support for up to 32 simultaneous users in addition to printers, modems, and other shared resource devices.



The Altos 3086 standard configuration includes one (1) Multidrop Communications Board. A second board may be added to double the system's Multidrop capacity. Each board can support up to a 1500' Multidrop interconnect cable segment; two additional 1500' cable segments can be added at any time using repeaters. This provides a total Multidrop interconnect cable span of 4500' per board (over 30 times the standard RS-232C transmission distance). In addition to the multi-drop capabilities of the Altos 3086, the system supports a co-existing 10-port Intel 8086 Serial I/O expansion board. If only one multidrop communications board is used, then up to two co-existing 10 port serial I/O boards may be added to the system.

Additional Multidrop features/benefits include:

▲ Standard RS-232C interface

Benefits:

- no need to buy and/or support non-standard terminals and printers
- supports existing RS-232C devices (e.g. Altos III & IV terminals)

▲ 4500' single cable run:

Benefits:

- extends RS-232C interface distance by 30 fold
- significantly reduces cabling costs on long cable runs

▲ Applications level transparency

Benefits:

- supports existing applications with no alterations to software packages
- no need to buy or support specialized applications

▲ **Terminal Cluster Units (TCU)**

The intelligent Terminal Cluster Unit provides a serial interface from any asynchronous RS-232 device, at baud rates of 50 to 19.2K baud, to the high-speed long distance RS-422 cable connected to the Multidrop Communications Expansion Board.

The TCU buffers data to and from up to 8 RS-232 devices and provides handshaking (flow control) for each.

▲ **Data Storage**

The Altos 3086 offers flexible data storage. Each system includes the following as standard equipment: an integral 170 MB ESDI disk drive, a 60 MB 1/4-inch streaming tape drive, and a 1.6 MB floppy disk drive. Up to two additional 170 MB disk drives may be installed for a total of 510 MB of internal mass storage.

▲ **Modularity**

A very important design objective of the Altos 3086 is modularity. While an entry-level system supports up to 16 users, memory, communications, mass storage options allow the system to support up to 32 users with superior performance.





## S O F T W A R E

### ▲ *Operating System*

The Altos 3086 utilizes an enhanced version of the industry standard XENIX® 3.0. XENIX 3.0 is a general purpose, multi-user, multi-tasking operating system based on the AT&T UNIX™ system. Featuring the power and portability for which UNIX systems are known, XENIX also offers several important enhancements which are essential for effective commercial use. These include:

- ▲ Easy to Learn Menu System – Allows end users to use XENIX and application software without having to learn XENIX commands.
- ▲ Menu Driven Installation Procedures – Makes it easy to get the system up and running initially, and then to attach new peripherals to the system as desired.
- ▲ Record and File Locking – Essential for data integrity and security in a multi-user environment.
- ▲ Automatic Powerfail Recovery – Enables the system to automatically restart and correct itself following an interruption in power.

Altos enhanced XENIX™ 3.0 for peak performance with the Intel processor architectures. Employing sophisticated techniques, Altos XENIX reduces system overhead – the time the system spends doing its own bookkeeping. Less time spent on overhead means more time spent solving problems for users.

Coupled with easy-to-use networking solutions and a comprehensive set of proven application programs, Altos XENIX 3.0 effectively meets the demands of commercial computing.

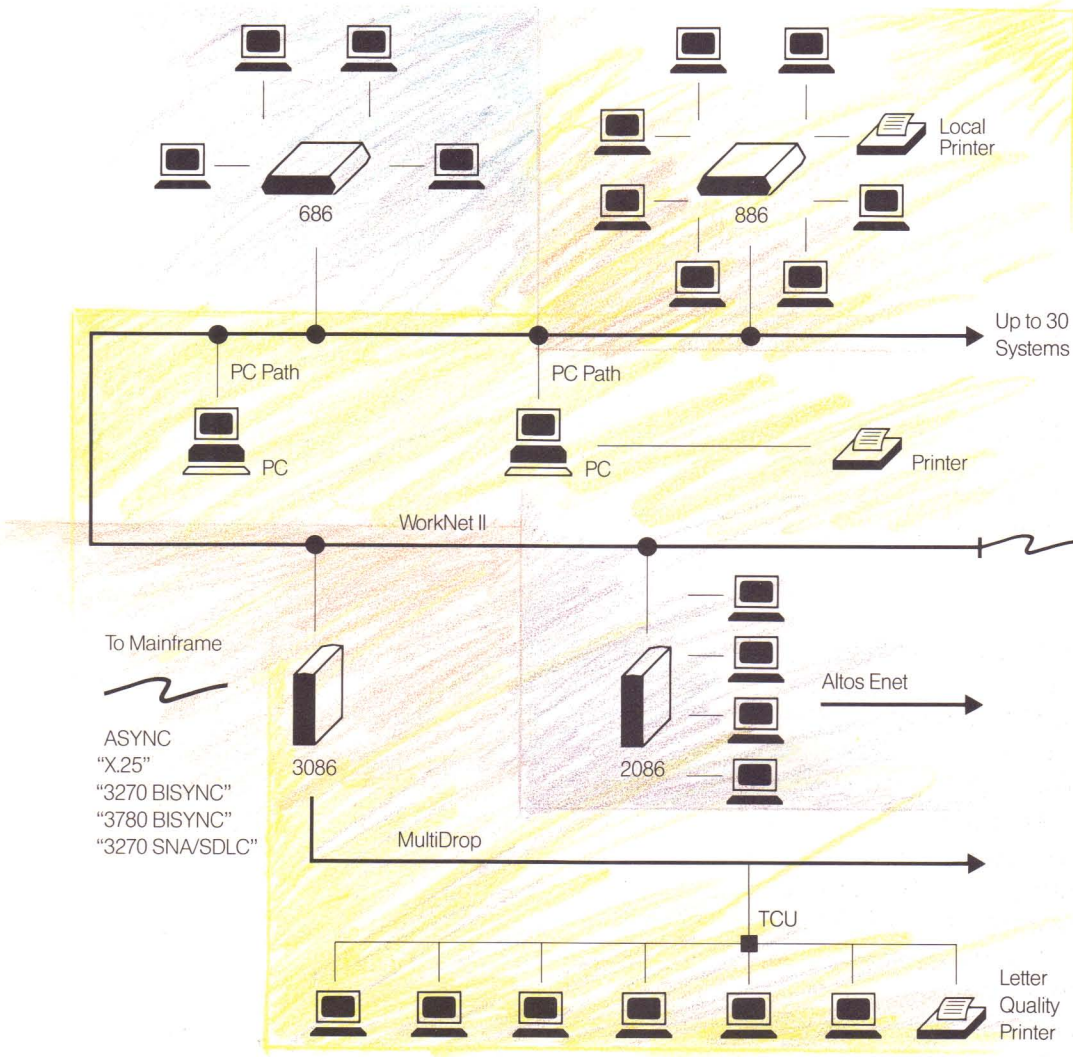
### ▲ *Communications Services*

The Altos 3086 supports a wide variety of communications software products to meet your communications requirements. The Altos WorkNet II LAN is an inexpensive, easy to install local area network that transforms individual systems into a transparent distributed processing environment for the Altos 3086 and other Altos systems. The software allows full access to files and peripheral devices that are remotely located on the other systems. Another communications software product, PC Path, provides support for personal computers on this same network and allows the same file and peripheral sharing between the MS/DOS and XENIX/UNIX operating systems.

The standard Multidrop interface supports the Altos WorkNet II and 2780/3780 Bisynchronous communications protocols. By adding an optional 10-port Serial I/O Communications Board the system can support 3270 Bisynchronous, 3270 SNA/SDLC, or X.25 communications protocols. By combining the networking capabilities of WorkNet II with other Altos communications packages a single Altos system may be used as a gateway for up to 30 Altos computers to access other non-Altos environments (e.g. IBM, Packet Switched Networks).

### ▲ *Languages*

The Altos 3086 provides a powerful development environment. An optimized C-Compiler is available in conjunction with a wide range of industry standard languages including; BASIC, COBOL, DBC, (Dibol Compatible), FORTRAN and Pascal.



The Altos 3086 supports a wide variety of communication software products to meet your communications needs.



# S P E C I F I C A T I O N S

## ▲ CPU Board

	<b>3086</b>
Main Processor	80286
Clock Frequency	12.5 MHz
Data Bus Size	32-bit
Address Bus Size	24-bit
Cache Size	4KB
Floating Point Processor (optional)	80287

## ▲ Memory Configuration

Minimum	4 MB
Maximum	8 MB
Expansion Board Sizes	2 or 4 MB

## ▲ MultiDrop Communications Subsystem

Processors	80286
Clock Frequency	6 MHz
On board Serial Ports	
Asynchronous/Synchronous	2
Asynchronous only	2
Configurable WorkNet II Port	1
MultiDrop Communications Port	1

## ▲ Terminal Cluster Unit (TCU)

Interface to Multidrop Comm. Board	RS-422
Interconnect Interface Medium	Drop Cable
Number of RS-232C Ports Supported	8
Terminal Communications Protocol	Async
Baud Rates Supported	50 to 19,200 bps
Method of Baud Rate Selection	Software Selectable
(standard 3086 Equipment includes 2 TCU-8's & drop cables)	

## ▲ File Processor Subsystem

Processor	8086
Clock Frequency	8 MHz
Parallel Printer Port	1
Transfer Rate to RAM	1.5 MB/sec
DMA Channels	4

## ▲ Hard Disk

Interface	ESDI
Number of Drives	up to 3
Physical Size	5¼"
Unformatted/Formatted	
Capacity	170 MB/146.0 MB
Seek Time	28 millisecond

## ▲ Floppy Disk

Max Drive/Chassis	1
Media Type	double sided/dual density
Media Size	5.25"
Media Capacity	1.6 MB unformatted 1.2 MB formatted

## ▲ Tape Drive

Media Type	¼" DC600 cartridge
Operating Mode	90 ips, streaming
Capacity	60 MB per cartridge
Format	QIC-24
Interface	QIC-36
Number of Tracks	9
Recording Mode	NRZI
Back-up time (60 MB)	20 minutes

## ▲ Physical Characteristics

Width	8"
Height	24"
Depth	22"
Weight	68 lbs to 86 lbs

## ▲ Environmental and Safety Standards

Meets FCC Docket 20780 class A requirements.	
Conforms to IEC 380 standard VDE 871 class A.	
UL, CSA and TÜV (VDE 806) approved.	
Ambient Temperature Range	60-90 F 15-32 C
Relative Humidity Range (noncondensing)	20-80%

## ▲ Warranty

This Altos product carries a 90-day limited warranty.

## ▲ Ordering Information

Each system is configured with one 80286 CPU board, one 4 MB RAM board, one MultiDrop communications subsystem with two 8-port TCU's and sufficient cabling for 16 ports, one file processor subsystem, 170 MB ESDI disk drive, 1.2 MB floppy, 60 MB streaming magnetic tape drive, Owner's Guide, and Operating System.

For more information please contact your Altos dealer.



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