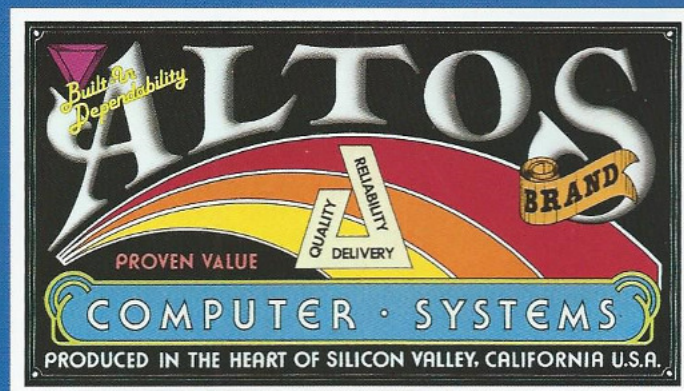


# Altos 68000-based systems

## The 16-bit systems from Altos





# Altos 68000-based systems

## State-of-the-art 16/32-bit systems at a practical price.

If you need a system that works like a mainframe but costs like a micro, the ALTOS® 568 family is your best buy. The 568 can serve from one to eight users, but its low price justifies single-user operation.

If you're looking for a powerful general-purpose business computer that provides multi-tasking for up to 16 users, you need the Altos ACS68000 family.

Based on the 68000 microprocessor, both systems have 32-bit CPU internal architecture with eight data and eight address registers for massive data manipulation power. They deliver high system throughput with an aggregate of more than two million instruction and data byte transfers per second. This speed, virtual memory, and 16 megabytes of memory addressability enables the 568 and 68000 to run mainframe software without overlays or contention problems.

Another aid in efficient sharing of resources among many users is the fully vectored interrupt capability. Thirty-four separately vectored interrupts, each independently programmable and maskable, make optimal use of system resources. Four KB of static RAM are reserved for CPU operations. This extra RAM allows CPU operation without accessing the system bus.

### Special 568 features

- Six RS-232 ports, expandable to 10
- CPU nucleus (30 ICs) provides for diagnostics
- CPU, memory, and I/O controller can be independently tested via external Multibus™ connector
- 5¼" minifloppy and Winchester storage with 10, 20, 40\* or 80\* megabytes (expandable to 160 megabytes)

\*40 and 80MB disk drives are 8"

### Special 68000 features

- Eight RS-232 ports, expandable to 16
- Parallel port
- 8" floppy and Winchester storage with 20, 40 or 80 megabytes (expandable to 160 megabytes)

### 568/68000 features

- 16/32-bit 68000 CPU operating at 8 MHz
- 16 MB directly addressable from CPU and DMA



- Virtual memory support\*
- Intelligent disk controller
- Intelligent serial I/O controller
- 256/512K RAM, expandable to one megabyte
- ALTOS-NET™ support (standard)
- Communications system option (568 only) (auto-dial, auto-answer modem, two chip Ethernet™ interface, and four RS-232 ports)
- Real time clock with battery back-up (568 only)
- Power fail detection (568 only)

\*68010-based systems—1Q '83

**Unique memory management.** Altos memory management provides address translation, write protection, and access control for each prescribed segment of main memory. Logical to physical address translation and various access attributes can be assigned to each segment 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.

Eight KB of ROM provide bootstrap and configuration control. This permits any on-line device to initialize the system.

Memory management enhances performance of the sophisticated UNIX™ System III operating system. Although this operating system is far more complex than those used in most microcomputers, Altos 68000-based systems have the resources to fully implement its features.

**Memory expansion.** The basic Altos 568 family configuration includes 256KB of RAM, but all hard disk systems carry 512KB. The 68000 has 512KB of RAM. Both systems are expandable to one megabyte.

**Real time clock.** The clock, with battery back-up, maintains time of day even during power failures or when the computer is not running. This provides fail-safe protection for automatic dial-up communications, administrative functions, alarms or process control.

**Power fail detection.** All Altos 568 systems include power fail detection. In the event of power failure, any data written to disk will not be lost. When power resumes, the system comes up with minimal operator intervention.

**Full communications support.** The Altos 568 and ACS68000 systems support asynchronous and synchronous protocols (2780/3780, 3270, SNA/SDLC), provide networking facilities, and include a high-speed (800 Kbaud) communications port.

**Disk storage.** ACS68000 systems provide half a megabyte of floppy storage and 568 systems provide one or two megabytes of floppy storage. Hard disk models are available with 10 (568 only), 20, 40, or 80 megabytes, upgradable to 160 megabytes.





**Operating systems.** Altos supports both UNIX System III and RM/COS™ operating systems for Altos 68000-based systems. UNIX provides excellent development, compilation and execution tools. Both are well suited for a wide variety of programming languages and business applications, while RM/COS is a COBOL operating system designed for business applications.

### Systems software supported for 68000-based systems

Operating Systems	Languages	Communications and Networking
UNIX System III RM/COS*	BASIC COBOL FORTRAN PASCAL C	ALTOS-NET Ethernet 2780/3780 (synchronous) 3270 Asynchronous SNA/SDLC X.25

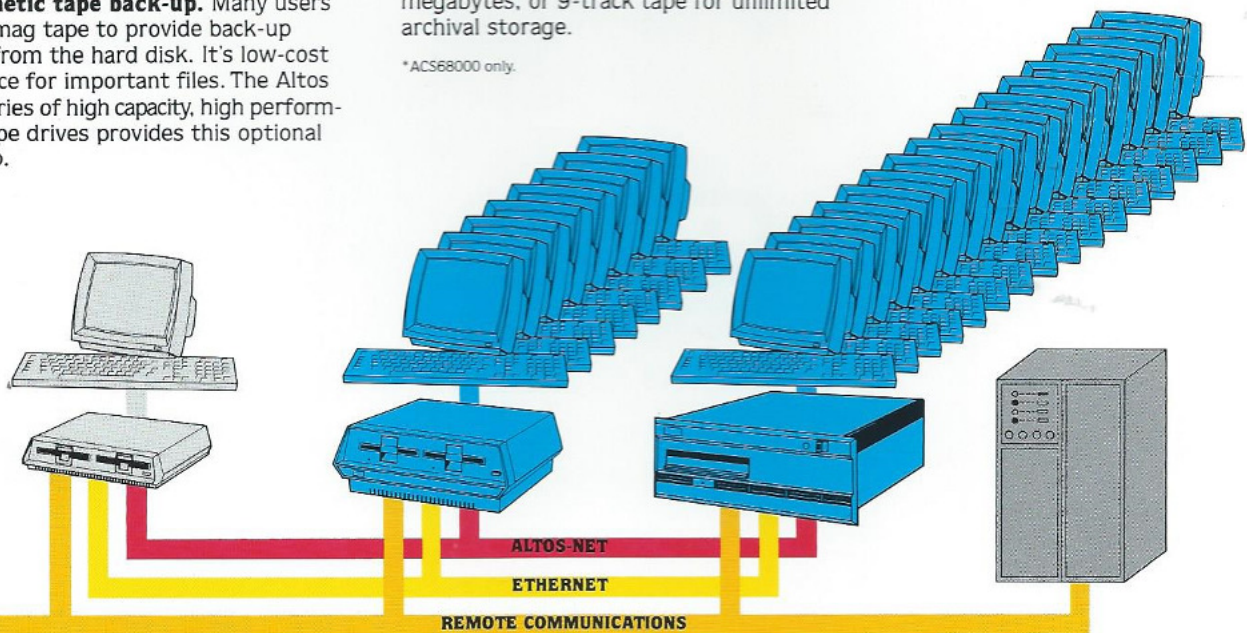
\*Supports all RM/COBOL applications software

**Intelligent disk controller.** Hard disk systems integrate an intelligent disk controller that takes full advantage of higher CPU speed and fast hard disk access. The controller supplies full track buffering, consecutive sector transfers, offloading of the central processor, and enhanced throughput. Auxiliary tape systems provide back-up insurance.

**Magnetic tape back-up.** Many users prefer mag tape to provide back-up copies from the hard disk. It's low-cost insurance for important files. The Altos MTU series of high capacity, high performance tape drives provides this optional back-up.

**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 an array processor, A to D or D to A converters, IEEE-488 bus interface, digitizer or digital relay boards, SMD interface for disk storage up to 600 megabytes, or 9-track tape for unlimited archival storage.

\*ACS68000 only.



ALTOS is a registered trademark and ALTOS-NET is a trademark of Altos Computer Systems. UNIX System III is a trademark of Western Electric. RM/COS is a trademark and COS990 and RM/COBOL are registered trade and service marks of Ryan-McFarland, Inc. Ethernet is a trademark of Xerox Corporation. 68000 is a product of Motorola, Inc. Multibus is a trademark of Intel Corporation.



## UNIX System III

Altos has selected the powerful UNIX System III operating system from Western Electric for the 68000 and 568 families. UNIX System III provides a wide selection of features, utilities, languages (C, FORTRAN, COBOL, PASCAL and BASIC), and applications (data base management, communications and networking, word processing, text processing and photocomposition).

UNIX System III supports variable record length files. It's a true multi-tasking, multi-user system. It offers an excellent environment for software development, distributed processing, data base management, scientific and educational applications.

The Altos "user-friendly" business command menu interface is designed for applications users, rather than programmers. It provides a simple, screen-oriented interface that broadens access to system capabilities.

Altos 568 and ACS68000 systems have the necessary memory, disk resources, and peripheral support necessary to take full advantage of UNIX System III's capabilities.

## RM/COS

RM/COS is a multi-user, multi-tasking COBOL operating system designed for development, compilation and execution of COBOL business applications. It's available for use on Altos 68000-based 568 and ACS68000 systems.

This operating system features sequential, relative, and multi-key indexed file types with blank compression, multi-level, expandable directories, automatic batch command file initiation, and powerful interactive COBOL statement level debug. Programs are ready to run after compilation without a link edit step, even with segmentation and overlays. Application software is protected via a software protection system.

The file system ensures data integrity

across power failures. RM/COS has a full screen editor and user definable RS-232 communication protocol.

Options include 2780/3780 emulation and the level 2 sort/merge COBOL verb and operator utility.

The COBOL source language is compatible with RM/COBOL, NCR COBOL, and TI COBOL. The system is equivalent to COS 990 used in Texas Instruments computers.

## The 568 family

MODEL	CPU	SPEED (MHz)	RAM (KB)	FLOPPY (MB)	HARD DISK (MB)	RS-232
568-2	68000	8	256 <sup>1</sup>	2	—	6 <sup>2</sup>
568-10	68000	8	512 <sup>1</sup>	1	10	6 <sup>2</sup>
568-12	68000	8	512 <sup>1</sup>	2	20	6 <sup>2</sup>
568-14	68000	8	512 <sup>1</sup>	2	40	6 <sup>2</sup>
568-18	68000	8	512 <sup>1</sup>	2	80 <sup>3</sup>	10

All systems are expandable to one megabyte of RAM.

1. Socketed for 512KB and expandable to one megabyte.

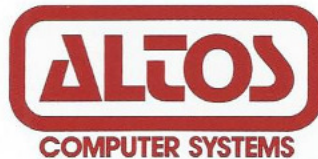
2. One port configurable for 800 KBaud, two are configurable for synchronous communications. Ten serial ports, modem and expansion capability for Ethernet interface is included.

3. The 568-18 will support two 80 MB Winchester hard disks.

## The 68000 family

MODEL	CPU	SPEED (MHz)	RAM (KB)	FLOPPY (MB)	HARD DISK (MB)	RS-232	PARALLEL
68000-12	68000	8	512	0.5	20	16*	1
68000-14	68000	8	512	0.5	40	16*	1
68000-18	68000	8	512	0.5	80	16*	1

\*An 800 KBaud port is standard. One port is configurable for synchronous communications.



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