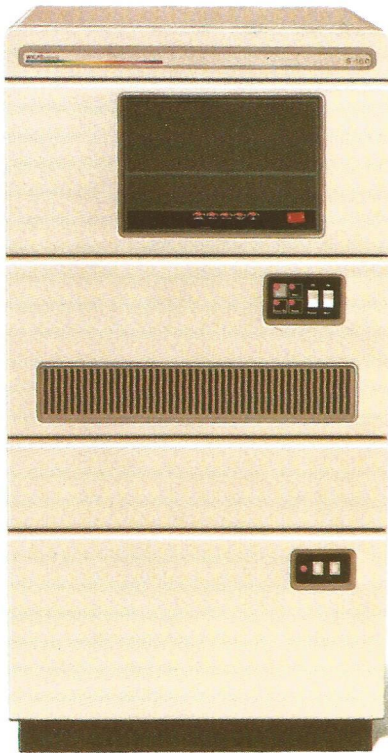


System 160



WICATsystems

WICAT SYSTEM 160

WICAT Systems, Inc., created the System 160 for those applications which exceed the range of desk-top computers, but whose budgets do not.

The 160's rack-mount, subsystem configuration allows users to buy the capabilities they need now with the option to expand later. Random-access memory ranges from 512 Kbytes to 4.5 Mbytes, additional slots support up to 16 users, and a special disk controller supplies speed and storage capacity usually found only on much larger systems.

PROCESSOR

- MC6800L8, 8 Mhz (approx. 1 million instructions per second)
- 16-bit processor (32-bit data operations)
- Memory Management
- 7 vectored interrupt levels
- 12-slot chassis (IEEE 796, extended Multibus*)

MEMORY

- 512 Kbytes to 4.5 Mbytes of dynamic ECC RAM

PERIPHERALS

- Disk Subsystems:
 - 10-39 Mbyte 5¼-inch Winchester Disk (formatted)
 - 630 Kbytes 5¼-inch Floppy Disk Drive (formatted)
 - 80/160/474 Mbytes Winchester SMD Disk
- Tape Subsystems:
 - 9-track tape drive (1600/3200 bpi, 25 ips)
 - ¼-inch Cartridge Tape (6400 bpi, 30/90 ips)
- Interfaces:
 - 1-16 RS-232 C Serial ports
 - 1-2 parallel printer ports
- Battery-backed Calendar Clock
- Hardware Floating Point (optional)

SYSTEM SOFTWARE

- Communications: 3275 emulation (Bisync.), 2780/3780 emulation (Bisync.)
- Multi-user Control System (MCS): A real-time, multi-user, multi-tasking operating system
- Operating System Options: UniPlus+* (UNIX*), CP/M Emulator*
- Language Support: APL.68000*, Assembler, W-BASIC, SMC-BASIC, C, RM-COBOL, LEVEL II COBOL, FORTRAN 77, and PASCAL
- Major Applications: Office Automations, UltraCalc, WISE (authoring system), Educational Courseware.

System 160 Hardware Specifications

ENVIRONMENTAL

Safety

Designed to meet UL 478 (EDP) and 114 (office equipment), and CSA 154 (EDP) and 143 (office equipment) requirements.

RFI/EMI

Complies with FCC Rules and Regulations, Part 15, Subpart J, Class A.

Temperature

Operating	50 to 95° F.	10 to 35° C.
Idle	-40 to 140° F.	-40 to 60° C.

Operating Altitude

	10,000 ft.	3,000 m.
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Operating Humidity (noncondensing)

	20 to 80%
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RACK MOUNT

Physical size

Height	Half Bay
Width	43 in.
Depth	21 in.
Weight	33 in.
	170 lbs.

CPU DRAWER

Physical size

Height	10 in.
Width	19 in.
Depth	26 in.
Weight	40 lbs.

Electrical

Frequency	47-440 Hz
Voltage	95-130/190-260 VAC
Watts	400

Timing

CPU (MHz)	8
Bus	Multibus IEEE 796*
Serial Ports (RS-232)	50-19,200 Baud
Parallel (Mb/sec.)	1

MTBF (hrs)

4000

1/4" CARTRIDGE TAPE SUBSYSTEM

Recording density	6400 bpi
Tape speed	30/90 ips
Transfer rate	192K bits/sec.

Capacity:

	Block Size		
	1024 bytes	2048 bytes	4096 bytes
Length of Tape			
300 ft.	5.6 MB	7.2 MB	8.5 MB
400 ft.	8.4 MB	10.8 MB	12.7 MB

80 MB SMD DISK SUBSYSTEMS

Physical size

Height	8.7 in.
Width	19 in.
Depth	26 in.
Weight	40 lbs.

Electrical (input power)

Frequency	47-440 Hz
Voltage	95-130/190-260 VAC
Watts	300

Specifications

Winchester Size	8 in.
Capacity	
Unformatted	84 Mbyte
Formatted	76 Mbyte
Access Time	
Track to Track	5 ms.
Average	20 ms.
Maximum	40 ms.
Transfer Rate	1.2 MB/sec.
Rotational Speed	3600 rpm

MTBF

10,000 hours

160 MB SMD DISK SUBSYSTEMS

Physical size

Height	10.4 in.
Width	19 in.
Depth	17.5 in.
Weight	128 lbs.

Electrical (input power)

Frequency	47-440 Hz
Voltage	95-130/190-260 VAC
Watts	500

Specifications

Winchester Size	14 in.
Capacity	
Unformatted	168 Mbyte
Formatted	152 Mbyte
Access Time	
Track to Track	6 ms.
Average	27 ms.
Maximum	55 ms.
Transfer Rate	1.0 Mbyte/sec.
Rotational Speed	2964 rpm

MTBF

9,000 hours

474 MB SMD DISK SUBSYSTEMS

Physical size

Height	10.5 in.
Width	19 in.
Depth	26 in.
Weight	140 lbs.

Electrical (input power)

Frequency	47-440 Hz
Voltage	95-130/190-260 VAC
Watts	600

Specifications

Winchester Size	10½ in.
Capacity	
Unformatted	474 Mbyte
Formatted	421 Mbyte
Access Time	
Track to Track	5 ms.
Average	18 ms.
Maximum	35 ms.
Transfer Rate	1.8 Mbyte/sec.
Rotational Speed	3961 rpm

MTBF

10,000 hours

9 TRACK TAPE DRIVE

Physical size

Height	8.7 in.
Width	19 in.
Depth	25 in.
Weight	80 lbs.

Electrical

Frequency	47-440 Hz
Voltage	95-130/195-260 VAC
Watts	300

Specifications

Recording Density	1600/3200 bpi
Tape Speed	25 ips
Transfer Rate	40 Kbytes/sec

MTBF

5500 hours

System Software

OPERATING SYSTEMS

The Multi-user Control System (MCS)

Users have simultaneous access to the system (multi-user), and each user can run several processes simultaneously (multi-tasking).

Command files and parameter files that contain lists of commands (script) or parameters can be executed as though the operator were typing them.

Logical Input/Output.

Input/Output redirection.

Named pipes.

75 standard utilities including a screen-oriented text editor, SORT/MERGE, incremental system backup.

Subdirectories (hierarchical) to any level.

File versions.

Logical names.

A variety of user interface programs. The standard interface is expandable and includes command line editing, prompted parameter entry, on-line helps, and parameter.

Keyed Sequential Access Method (KSAM).

Memory management also allows the following:

Processes can share pages of memory¹.

Pages of logically addressed memory can be write-protected.

All user processes share a uniform context.

Noncontiguous physical memory pages appear as contiguous logical memory pages (within a 2MB limit).

User processes are isolated from each other as well as from the MCS.

The text, or code, segment of a process being used simultaneously by several users is write-protected and shared automatically.

WICAT UniPlus+

WICAT's UniPlus+ system derives from the UNIX* operating system and combines a complete set of basic utilities with a set of powerful mechanisms that allow the user to create new commands. The UNIX system is self-contained and therefore adaptable to numerous new processors and hardware systems. The kernel and utilities for WICAT's UniPlus+ are essentially those of UNIX Version 7 from Bell Laboratories.

Utilities and subsystems include:

C Shell	(command processing language)
vi	(visual display editor)
SCCS	(Source Code Control System)
curses	(screen management library)
nroff, tbl	(document preparation)
yacc, lex	(language development)
uucp, cu	(UNIX networking)
badblk	(handling bad blocks)
mt	(Berkeley mag tape)

LANGUAGES

Assembler

The WICAT 68000 Assembler processes files at 2000 lines per minute. It supports the standard mnemonics and pseudo-instructions in Motorola's portable cross assembler to transport applications quickly and effectively.

APL.68000

APL.68000 is the first APL interpreter for the MC68000 microprocessor. It supports a powerful file system, formatter, and IEEE floating point arithmetic.

C

The WICAT C compiler derives from the standard UNIX* C compiler and comes with full standard I/O and math libraries. This low-level language allows easy access to the operating system and hardware, as well as to FORTRAN and Assembler.

FORTRAN77

FORTRAN77 is a GSA-validated, full implementation of the ISO standard. FORTRAN77 has an enhanced I/O and program structure and still supports the FORTRAN 66 standard.

PASCAL

WICAT's PASCAL compiler produces an optimized native 68000 code. Extensions to the ISO standard include random file access, UCSD-compatible strings, and liberal-set capability.

W-BASIC

W-BASIC is WICAT's new enhanced BASIC programming language. It is fully Microsoft compatible and complies with the ANSI standard for BASIC. Availability for both MCS and UNIX operating systems gives W-BASIC ease of use and broad application for both scientific and educational use.

SMC-BASIC

SMC-BASIC is a Business Basic that retains the simplicity of the original Dartmouth BASIC, yet includes enhancements that make the language particularly simple and easy to use for business applications.

RM-COBOL

RM-COBOL is an implementation of the ANSI 74 COBOL standard, designed for the efficient development and execution of COBOL business applications. RM-COBOL has the features commonly required by minicomputer and mainframe applications.

LEVEL II COBOL

WICAT is the first to offer this GSA certified high-level COBOL compiler for use on microcomputers. The compiler offers the user a broad range of COBOL business applications at the highest possible level. An optional native code generator allows greatly increased speed and efficiency of execution.

*Multibus is a trademark of INTEL Corporation.

*CP/M is a trademark of Digital Research.

*UniPlus+ is a product of Unisoft.

*APL.68000 is provided by The Computer Company.

*Sequitur is a trademark of the Pacific Software Manufacturing Co.

*UNIX is a trademark of Bell Labs.