System 155

WICATsystems

WICAT System 155

The System 155, an expanded version of WICAT's popular System 150, is the ideal computer for businesses that support multi-user environments, require large main memory capacity, and want to be prepared for system expansion.

The system's MC68000 microprocessor executes approximately one million instructions per second, and memory capacities range from 512 Kbytes to 4.5 Mbytes of dynamic ECC RAM. Two 5.25-inch Winchester disks (with 10/15 Mbyte densities each) provide mass storage, while a cartridge-tape drive allows for even greater capacity.

The trim vertical package is an attractive addition to any office environment, and the combination of high performance and low cost makes the System 155 the answer to businesses' computer needs.

PROCESSOR

- MC68000L8, 8 MHz (approx. one 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

COMMUNICATIONS

- Bisync 3270
- Bisync 2780/3780
- Async RS-232 C

PERIPHERALS

- 10/15 Mbyte Winchester Disk Subsystem
- DEI Cartridge Tape Subsystem (6400 bpi, 30/90 ips)
- Interfaces
  - —1 to 2 RS-232 C serial ports (async. or sync.)
  - —6 to 12 RS-232 C serial ports (async. only)
  - —1 to 2 general-purpose parallel ports
  - —Battery-powered calendar clock
- Hardware floating point (optional)

SYSTEM SOFTWARE

- Multi-user Control System (MCS): A realtime, multi-user, multi-tasking operating system
- Operating System Options: UniPlus* and CP/M Emulator
- Languages: APL, Assembler, Coherent BASIC, SMC BASIC, C, CIS COBOL, RM/COBOL, FORTRAN77, and Pascal
- Major Applications: Office Information System (word processing), UltraCalc, WISE (courseware development system), and Sequitur (relational DBMS)

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System 155 Hardware Specifications

DIMENSIONS

Height	25 5/8 in.
Width	10 5/16 in.
Depth	23 5/8 in.

ENVIRONMENTAL AND SAFETY

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. or 3,000 m.

Operating Humidity
(noncondensing) 20 to 80%

ELECTRICAL

Power requirements

Frequency	50–60 Hz
Voltage	110/220
Watts	300

Timing

CPU	8 MHz
Bus	IEEE 796 (Multibus*)
RS-232 C serial ports	50–19.2 Kbaud
Parallel	1 Mbyte/sec.

MTBF 4000 hours

5.25-inch WINCHESTER DISK SUBSYSTEM

Capacity

Unformatted	13 Mybtes	19 Mbytes
Formatted	10 Mbytes	15 Mbytes

Access time

Track to track	3 ms.
Average	85 ms.
Maximum	170 ms.
Transfer rate	625 Kbytes/sec.
Rotation rate	3000 rpm

CARTRIDGE TAPE

Capacity

.25-inch Cartridge Tape	450-foot tape
Unformatted	17 Mbytes
Formatted	12 Mbytes (4 Kbytes/block)

Access time

Recording density	6400 bpi
Tape speed	30/90 ips
Transfer rate	192 Kbits/sec
Capacity	
¼-inch Cartridge Tape	(450 foot tape)
Unformatted	17 Mbyte
Formatted	12 Mbyte (4 Kbyte/block)

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).

Background processing.

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 files.

Keyed Sequential Access Method (KSAM).

Memory management also allows the following:

- Processes can share pages of memory.
- 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.
- 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.

WICAT has source licenses with AT&T for UNIX Version 7 and UNIX System III. The kernel and utilities for WICAT's UniPlus+ are essentially those of UNIX Version 7 from Bell Laboratories. In addition to enhancements made by WICAT Systems, UniPlus+ includes the enhancements of UNIX System III, and the 4.1 Berkeley Standard Distribution.

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)

APPLICATIONS

Office Information System (OIS) Word Processing

This flexible word processing system, with editing and formatting capabilities, includes pagination, search and replace, automatic page numbering, cut and paste, right justification, a spelling dictionary, and other essential functions.

UltraCalc

UltraCalc, a versatile electronic worksheet, allows you to manipulate and analyze tabular data using graphs, automatic recalculations, 15-digit arithmetic, and advanced math functions. These features simplify economic forecasting, trend analysis, and other computations.

WISE

WISE is a courseware development system that allows the nonprogrammer to use text and graphics editors as well as instructional design features to create sophisticated instructional programs. WISE eliminates the need for an intermediary programmer to develop computer-operated lessons on any subject.

SEQUITUR

This relational database management and word processing system is totally screen-oriented and offers fully integrated editing and relational data manipulation. Sequitur also provides unprecedented versatility for entering data; generating reports, forms, and mailing lists; and using word processing to manage documents.

LANGUAGES

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.

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.

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.

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.

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.

CIS COBOL

WICAT offers the GSA-approved CIS COBOL with special screen handling features and extensions for interactive debugging. The compiler exceeds the ANSI Level 1 COBOL requirements and handles sequential, relative, and indexed sequential files.

Coherent BASIC*

Coherent BASIC is an extended dialect of BASIC that can be used interactively like an interpreter. Coherent BASIC also produces code like a compiler and then executes the code.

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.

*Multibus is a trademark of INTEL Corporation.
*UNIX is a trademark of Bell Labs.
*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.
*Coherent BASIC is a product of Mark Williams Co.