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 512KB to 4.5MB, additional slots support up to 12 users, and a special disk controller supplies speed and storage capacity usually found only on much larger systems.

The various configurations and options for the 160 are outlined below:

PROCESSOR

- MC68000L8, 8MHz (approx. 1 million instructions per second)
- 16-Bit Processor (32-bit data operations)
- Memory Management
- 7 Vectored Interrupt Levels
- 12-Slot Chassis (Multibus* architecture, IEEE 796)

MEMORY

- 512KB/4.5MB Dynamic ECC RAM

COMMUNICATIONS

- Bisync 3270
- Bisync 2780/3780

PERIPHERALS

- Disk Subsystems:
  - 10/15MB Winchester Disk (formatted)
  - 960KB 5¼" Floppy Disk Drive (unformatted)
  - 80/160/474MB SMD Disk
- Tape Subsystems:
  - Cipher Tape (9-track, 1600/3200 bpi, 25 ips)
  - DEI Cartridge Tape (6400 bpi, 30/90 ips)
- Interfaces:
  - 1/2 RS-232C Serial Interfaces (async. or sync.)
  - 5/10 RS-232C Serial Interfaces (async. only)
  - 1/2 General-Purpose Parallel Interface
- Battery-Backed Calendar Clock
- Options:
  - Hardware Floating Point

SYSTEM SOFTWARE

- Multiuser Control System (MCS—real time, multiuser, multitasking operating system
- Operating System Options: UNIX*, CP/M* Emulator
- Language Support: APL, Assembler, BASIC, C, COBOL, FORTRAN 77, and Pascal
- Major Applications: Office Automation, UltraCalc, WISE (authoring system), Educational Courseware

The System 160 fills an important gap in the microcomputer market as an ideal intermediate system.

P.O. Box 539 1875 South State Orem, UT 84057 (801) 224-6400
441 Lexington Avenue, Suite 608 New York, NY 10017 (212) 697-4740
20 North Wacker Drive, Suite 1642 Chicago, IL 60606 (312) 630-0010
180 Grand Avenue, Suite 1055 Oakland, CA 94612 (415) 834-6723
Edgbaston House 3 Duchess Place Edgbaston, Birmingham, England B16 8NH 21 454 7782

System 160 Hardware Specifications

ENVIRONMENTAL

Safety:
Designed to meet UL 478 (EDP) and 114 (Office Equipment), and CSA 154 (EDP) and 143 (Office Equipment).

EMI:
Designed to meet US FCC Rules and Regulations, Part 15, Subpart J, Class A

Temperature		
Operating:	50 to 95°F	10 to 35°C
Non-operating:	−40 to 140°F	−40 to 60°C
Operating Altitude	10,000 ft.	3,000 m.
Operating Humidity (non-condensing)		20 to 80%

Rack Mount:

Physical size	Quarter Bay	Half Bay
Height	31"	43"
Width	21"	21"
Depth	33"	33"
Weight	120 lbs	170 lbs

CPU DRAWER

Physical size	
Height	10"
Width	19"
Depth	26"
Weight	40 lbs
Electrical	
Frequency (Hz)	50-60
Voltage	110/220
Watts	300
Timing	
CPU (MHz)	8
Bus	Multibus IEEE 796*
Serial Ports (RS232)	50-19.2K Baud
Parallel (MB/sec.)	1
MTBF (hrs)	4000

5¼" WINCHESTER DISK SUBSYSTEMS

Physical size		
Height	8.7"	
Width	19"	
Depth	26"	
Weight	50 lbs	
Electrical (input power)		
Frequency	50-60 Hz	
Voltage	110/220	
Watts	300	
Specifications		
Winchester 5¼" Disks (4 max.)		
Capacity		
Unformatted	13MB	19MB
Formatted	10MB	15MB

5¼" WINCHESTER DISK SUBSYSTEMS, cont.

Access Time	
Track to Track (ms)	3
Average (ms)	85
Maximum (ms)	170
Transfer Rate (KB/sec.)	625
Rotational Speed (RPM)	3600
Floppy 5¼" Disks (1 max.)	
Capacity	
Unformatted	960KB
Formatted	616KB
Access Time	
Track to Track (ms)	6
Average (ms)	267
Maximum (ms)	583
Transfer Rate (KB/sec.)	31
Rotational Speed (RPM)	300
Cartridge Tape Subsystem	
Recording Density	6400 bpi
Tape Speed	30/90 ips
Transfer Rate	192K Bits/sec.
Capacity	
¼" Cartridge Tape	(450' tape)
Unformatted	17MB
Formatted	12 MB (4K Byte/block)

84 MB SMD DISK SUBSYSTEMS

Physical size	
Height	8.7"
Width	19"
Depth	26"
Weight	40 lbs
Electrical (input power)	
Frequency	50-60 Hz
Voltage	110/220
Watts	300
Specifications	
Winchester size	8"
Capacity	
Unformatted	84
Formatted	76
Access Time	
Track to Track (ms)	5
Average (ms)	20
Maximum (ms)	40
Transfer Rate (MB/sec.)	1.229
Rotational Speed (RPM)	3600
MTBF (hrs)	10,000

160 MB SMD DISK SUBSYSTEMS

Physical size	
Height	16"
Width	19"
Depth	26"
Weight	100 lbs
Electrical (input power)	
Frequency	50-60 Hz
Voltage	110/220
Watts	400

168 MB SMD DISK SUBSYSTEMS, cont.

Specifications	
Winchester size	14"
Capacity	
Unformatted	168
Formatted	152
Access Time	
Track to Track (ms)	6
Average (ms)	27
Maximum (ms)	55
Transfer Rate (MB/sec.)	1.012
Rotational Speed (RPM)	2964
MTBF (hrs)	10,000

474MB SMD DISK SUBSYSTEMS

Physical size	
Height	10.5"
Width	19"
Depth	26"
Weight	140 lbs
Electrical (input power)	
Frequency	50-60 Hz
Voltage	110/220
Watts	600
Specifications	
Winchester size	10½"
Capacity	
Unformatted	474
Formatted	421
Access Time	
Track to Track (ms)	5
Average (ms)	18
Maximum (ms)	35
Transfer Rate (MB/sec.)	1.859
Rotational Speed (RPM)	3961
MTBF (hrs)	10,000

9 TRACK TAPE DRIVE

Physical	
Height	8.7"
Width	19"
Depth	25"
Weight	80 lbs
Electrical	
Frequency	50-60 Hz
Voltage	110/220 volts
Watts	300
Specifications	
Recording Density	1600/3200 bpi
Tape Speed	25 ips
Transfer Rate	160K Bytes/sec
Capacity	
½" Mag tape	(2,400' tape)
Unformatted	46 MB
Formatted	37 MB (4K Bytes/block)
MTBF (hrs)	5500 hrs

System Software

OPERATING SYSTEMS

MCS

WICAT's Multiuser Control System (MCS) is one of the most powerful operating systems available on a microcomputer today. It contains many features rarely found even on larger systems. System features include:

Real Time Operation
Multiuser, Multitasking
Command Line Editing
User Modifiable and Extendable Help Facility
Hierarchical File Structure
KSAM
Sort/Merge
Screen Oriented Editor

WICAT has succeeded in producing a microcomputer system that is appreciated by both sophisticated implementors and general users.

UNIX (UniPLUS+)

Currently the world's most popular development system, UNIX enjoys wide exposure because of its portability. The WICAT implementation of UNIX is derived from the UniSoft port (JniPLUS+) which includes the standard features of UNIX V7, Berkeley enhancements, such as C Shell, and the Visual Editor and such commerically used functions as record locking and sort/merge.

LANGUAGES

RM/COBOL

RM/COBOL is a high level 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* which has retained the simplicity of the original Dartmouth BASIC, but with added enhancements that make the language particularly simple and easy to apply to business applications.

Pascal

WICAT's Pascal compiler produces an optimized native 68000 code. Extentions 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 a machines operating system and hardware, as well as to FORTRAN and Assembler.

FORTRAN 77

FORTRAN 77 is a GSA-validated, full implementation of the ISO standard. FORTRAN 77 has an enhanced I/O and program structure and yet 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*

WICAT's extended dialect of BASIC not only functions as an interactive interpreter, but also produces and executes code like a compiler. BASIC can generate assembly files that can be linked with other files to form an executable image independent of the interpreter.

Assembler

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

* UNIX is a trademark of Bell Labs
* UniPLUS+ , a product of Unisoft
* CP/M is a trademark of Digital Research
* Multibus is a trademark of INTEL Corporation
* APL.68000 is provided by The Computer Company
* Coherent BASIC is a product of Mark Williams Co.