ONYX
Onyx Systems, Inc.

C5002A, C8002A Series

16-Bit Family Of Multi-User System

- All have Winchester disk, magnetic tape cartridge backup, terminal, printer and communication ports
- Select disk capacities—C5002A: 14, 21 megabytes (unformatted); C8002A: 20, 40 megabytes (unformatted)
- Select memory size, 256KB, 512KB, 1024KB
- Select terminal/communication - 5 or 11
- All run the UNIX™ System III

Designed For System Expandability

- Add disk storage capacity - up to 160 megabytes on-line
- Add memory to support additional users as needed
- Add communication ports when needed
- Add local area network communications when needed

Supports Business Applications

- UNIX System III - multi-user operating system
- Selection of application languages - BASIC, COBOL, FORTRAN, PASCAL
- Accounting, word processing, database management, communications, and graphics capabilities

Fully supported Nationwide

- Installation and maintenance available nationwide
- Multi-level training program to meet user needs
- Consultation and assistance by telephone or on-site
- Software maintenance services.

System Features

The heart of the system is a high speed 16-bit Z8001 microprocessor 256K-1024K bytes of high speed memory. In the Onyx C5002A and C8002A Series machines memory error detection, power failure shutdown and built-in power up diagnostics ensure high reliability. Designed for the office environment, the systems are rugged and have no special air conditioning or power requirements.

The built-in high speed Winchester disk stores from 14 to 40 megabytes (unformatted), providing generous storage for system software, application software, and data files. Internal Winchester disk storage eliminates the error prone and time consuming procedure of switching between on-line and off-line storage media. The disk drive is completely sealed and is impervious to environmental conditions and requires no scheduled maintenance.

A built-in magnetic tape cartridge drive provides fast and easy backup for the Winchester disk. Up to ten megabytes of data can be stored on a single tape cartridge. The backup process usually requires only a single command and takes less than 10 minutes. Since the media is enclosed in a rugged dustproof case, the cartridge tape is a highly durable and reliable means

of backing up critical system software and data files. Every backup made on the Onyx C5002A or C8002A is subjected to a Cyclical Redundancy Check (CRC) to assure accurate and complete backup. In this way errors can be detected and corrected automatically, **before** the backup is required for data restoration.

Depending on the options selected, five or eleven serial ports (RS-232C) are available for a variety of uses - serial printer, user terminals, or communications with other computer systems. Two of the ports can be configured for use with either synchronous or asynchronous modems.

Each system supports a variety of printers to meet every business requirement: letter quality units for correspondence and documentation; low cost dot matrix units for low volume internal use; and high speed printers which can also produce letter quality documents, graphs and charts. All offer upper and lower case capability (96 ASCII characters), six part forms and up to 132 columns. The letter quality printer supports either single sheet or continuous form paper. Printers are interfaced to the system via a serial port or the parallel port, depending on the number of user terminals attached to the system.

System Options

Options available for each system include the UNIX operating system, programming languages, the SCCS document control system, terminals and networking.

- ### Operating System

The operating system is an Onyx version of Western Electric's UNIX System III operating system. Adapted

specifically for this family of computers, it offers a powerful, intelligent, multi-programming environment, normally associated only with larger computer systems. The UNIX operating system performs program control, I/O and file management functions commonly requiring user programming when implemented under the other operating systems.

The UNIX operating systems uses the hardware protection features of the processor to maintain system and program integrity. Its memory management and multi-programming capabilities allow multiple, concurrent user activities, making optimum use of system resources.

The UNIX operating system provides an executive to control user log-on and ensure a convenient, secure, multi-user environment in which all users are protected from one another. Its background processing capability allows multiple background jobs to execute concurrently with interactive user jobs. Its spooling facility insures orderly usage of output devices by independent users.

Data management capabilities include complete file protection, device-independent I/O, and hierarchal file directories to logically catalog programs and data.

• Programming Languages

UNIX Operating System user programming languages fulfill a variety of commercial, scientific computational applications. 'C,' the native language included with the UNIX Operating System, is a general purpose programming language well suited to implement numerical, text processing and database applications. Although 'C' uses the capabilities of many computers, it is independent of any particular machine architecture, so that with a little care it is easy to write 'portable' programs.

The COBOL is an interactive U.S. Government certified version of the ANSI 1974 standard of this widely used business applications language. It offers full file input/output capabilities, including sequential, random and indexed (keyed) file organizations. Interactive support simplifies programming when implementing applications requiring formatted screen displays to aid the operator in data entry.

BASIC is a business oriented language with support for decimal digit computations and sophisticated alphanumeric data manipulation. It is especially suitable for screen formatting and data entry applications. Powerful print capabilities make it easy to format reports, safeguard check figures and make use of pre-printed forms.

The FORTRAN is ANSI standard X3.9-1978 with extensions to simplify conversion efforts of FORTRAN 66 programs. The compiler generates reentrant and recursive code for maximum memory efficiency and programming ease. The compiler generated code is fully compatible with 'C' and there are extensions to aid in interfacing 'C' procedures to FORTRAN routines. Both full and half word integers are supported. All computations are done with full 63-bit accuracy.

The PASCAL language is a high-level language used to implement structured programs, thus simplifying the identification and correction of logical errors in programs, and achieving greater programmer efficiency. The PASCAL offered by Onyx under the UNIX operating system is USCD PASCAL, a recent popular variation that provides more interactive capability than earlier PASCAL versions.

• Terminals

The systems function with a wide range of terminal types including the Onyx DT/80 and DT/132. The DT/80 offers 24 lines with 80 characters per line. The DT/132 allows the user to switch between 80 and 132 characters per line. In addition the DT/132 supports double-sized characters (height and/or width), allowing the application to emphasize key items of information on the screen.

The Onyx terminal has been designed for ease of use and operator comfort. The detachable keyboard has 67 sculptured keys arranged in standard typewriter format. An 18 key auxiliary numeric keypad includes four function keys which can be used to implement complex repetitive operations with a single key stroke. Seven keyboard lights show terminal status, four of which can be used to show the status of a programmed function. A five foot coiled cord with jack connects the keyboard to the system, allowing the user to place the keyboard in a convenient position. The display has a non-glare 12-inch green phosphor screen which reduces eye strain to a minimum. Smooth scrolling, line graphics, intensity control, reverse video, and blink capabilities are all standard.

• Networking

A local area network, OMNINET™ is available for the C5002A and C8002A. Up to 64 computer systems can be interconnected using twisted pair cables - simple to install and modify.

System Expansion

Up to three additional 8-inch Winchester disk storage units may be attached to the C8002A systems; capacities are 20 or 40 megabytes . A single additional drive (14, 21MB) may be attached to the C5002A system. Drives of different capacities may be added to the system without regard to the size of the original built-in disk unit. Like the built-in disk unit, each add-on disk is completely enclosed and requires no scheduled maintenance.

Memory (RAM) may be expanded to a maximum of 1024K bytes with the addition of a single module. With the additional memory the number of serial ports maybe increased from five to eleven.

System Support

System support encompasses a broad range of services available to every user of Onyx products. Product documentation is complete and concise. "Getting Started" manuals aid the new user in becoming familiar with the system. Training facilities with experienced instructors are available to introduce new customers to Onyx products. Seminars include both lecture and "hands-on" sessions so that users gain experience with the system before using it on their own. Installation services include demonstrating the system as well as giving explanations of the system operation and its maintenance requirements. Product specialists are available for consultation either by telephone or at the customer's place of business. They provide assistance if problems occur, and answer questions from new users of Onyx products

Onyx product quality is assured by rigorous testing before shipment to the customer and all Onyx hardware products carry a 90 day warranty. Should problems develop, however, an extensive system support organization is available for troubleshooting, maintenance and on-site repair services.

Specifications

Processor	Z8001, 6 MHz, 100+ instructions, DMA	Magnetic tape	Single ¼-inch drive, 6400 bpi, 90 ips, up to 10M bytes capacity (300 foot tape)
Memory	256K bytes expandable to 1M bytes, byte parity		
Ports	5 or 11 RS-232C (2 with modem support), 1 8-bit parallel (Centronics compatible)	C8002A Size	4.32cm(17.0in) x 20.3cm(8.0in) x 55.9cm(22.0in)
		Weight	2.70kg(60.0lb)
Winchester disk		C5002A	
C8002A	Single 8-inch drive, 20 or 40 MB (unformatted), 35 Msec average access time (50 Msec on 40MB) 8.3 Msec average latency time, 648K bytes/second transfer rate	Size	4.32cm(17.0in) x 20.3cm(8.0in) x 38.1cm(15.0in)
		Weight	24.9kg(55.0lb)
		Operating Environment	
C5002A	Single 5¼-inch drive, 14 or 21 MB (unformatted), 68 Msec average access time, 8.3 Msec average latency time 1M bytes/second transfer rate	Temperature	10-40°C (50-104°F)
		Humidity	20%-80% Noncondensing
		Electrical	110 V, 60Hz, 220 V, 50Hz 450 watts

Important

The materials contained herein are summary in nature, subject to change, and intended for general information only. Details and specifications concerning the use and operation of Onyx equipment and software are available in the applicable technical manuals, available through sales representatives and outlets.

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