



**ONYX**  
Onyx Systems, Inc.

## SUNDANCE-16

## Product Description



## Sundance-16™ Features

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The integrated multi-user, SUNDANCE-16 computer system is an easy to use, low cost system with hardware and software capabilities normally found only in much larger systems. The entire system is contained in a single compact and attractive office environment terminal unit.

The heart of the system is a Z8001 microprocessor. The SUNDANCE-16 offers up to 512K bytes of high speed memory and supports as many as five users. Memory error detection, power failure shutdown and built-in power up diagnostics ensure high reliability and data integrity. Designed for the office environment the SUNDANCE-16 has no special air conditioning or power requirements.

Depending on the model selected the built-in Winchester disk drive stores 7, 14, or 21 megabytes (unformatted), providing generous storage for system software, application software, and data files as well as eliminating the error prone and time consuming procedure of switching between on-line and off-line storage media. Completely sealed, the disk drive is impervious to environmental conditions and requires no scheduled maintenance.

A built-in magnetic tape cartridge provides fast easy backup capability for the Winchester disk. Up to ten megabytes of data can be stored on a single cartridge. A complete backup usually requires only a single command and take less than 10 minutes. Since the tape is enclosed in a rugged dustproof case, this device is a highly reliable means of backing up critical system software and data files. Every backup made on the cartridge tape is subjected to a Cyclical Redundancy Check (CRC) to assure accurate and complete backup.

## Sundance-16 Options

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A wide range of options is available with the SUNDANCE-16, including the UNIX™ operating system and programming languages.

### Operating System

The UNIX operating system provided for the SUNDANCE-16 computer system is an adaptation of Western Electric's UNIX System III Operating System. Developed specifically for the SUNDANCE-16 it offers a powerful, intelligent, multi-programming environment, normally associated with large computer systems. UNIX operating system performs program control, I/O and file management functions commonly implemented by user programming under other operating systems.

UNIX System III uses the hardware protection features of the SUNDANCE-16 to maintain system and program integrity. Its memory management and multi-programming capabilities allow multiple user activities to occur concurrently, making optimum use of system resources.

The terminal has been designed for ease of use and operator comfort. The detached 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 allowing the user to place the keyboard in a convenient position. To minimize eye strain SUNDANCE-16 has a 12-inch non-glare green screen. Smooth scrolling, line graphics, intensity control, reverse video, and blink capabilities are all standard.

SUNDANCE-16 is available in two display models. The Model 80 offers 24 lines with 80 characters per line. The Model 132 allows the user to switch between 80 and 132 characters per line. In addition the Model 132 supports double-sized characters (height and/or width), allowing the application program to emphasize key items of information on the screen.

Seven ports are standard: three ports (RS-232C) for interfacing to a low speed (serial) printer and user terminals, one for a high speed (parallel) printer, and one port (RS-232C with either synchronous or asynchronous modem support) for interfacing to a fourth terminal or communication with another computer system. A sixth connector provides an Intelligent Link to a non-interruptible power supply, thus assuring continuous operation in the event of a power outage. A disk expansion port allows an additional Winchester disk drive to be configured with the system.

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 hierarachial file directories to logically catalog programs and data.

### Programming Languages

The COBOL is an interactive version of the ANSI 1974 standard of this widely used business applications language. COBOL offers full file input/output capabilities, including sequential, random and indexed (keyed) file organizations. Interactive

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™UNIX is a trademark of Bell Laboratories, Inc.

Onyx Systems' UNIX System III operating system is derived from AT&T's UNIX System III operating system. Onyx Systems is licensed to distribute UNIX System III under the authority of the Western Electric Company.

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 recently developed high-level language designed for implementation of structured programs, ease of use, completeness and convenience. Structured programming is a method used to simplify the identification and correction of logical errors in programs, thus achieving greater programmer efficiency. The PASCAL offered by Onyx under UNIX operating system is USCD PASCAL, a recent popular variation that provides more interactive capability than earlier PASCAL versions.

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## Printers

The system supports a variety of printers to meet every business requirement: for example, a letter quality unit for correspondence and documentation; a low cost dot matrix unit for low volume internal use; and a high speed (200 lines per minute) printer which can also produce letter quality documents. All offer upper and

lower case capability (96 ASCII characters), six part forms and 132 columns. The letter quality printer supports either single sheet or continuous form paper. Printers are interfaced to the system via the serial or the parallel port, depending on the number of user terminals attached to the system.

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## Terminals

The SUNDANCE-16 supports as many as five terminals by attaching terminals to the RS-232C ports. Full function terminals available from Onyx include the DT/80 and the DT/132. The DT/80 is identical to the keyboard/

display subsystem of the SUNDANCE-16, Model 80. The DT/132 is identical to the keyboard/display of the Model 132. Either or both the DT/80 and DT/132 may be attached to either model of the SUNDANCE-16.

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## System Expansion

The basic configuration of the SUNDANCE-16 includes 256K bytes of memory and a 7 megabyte Winchester disk. Memory is expandable to 512K bytes. Optional

disk sizes are 14 or 21 megabytes. An additional disk drive may also be configured.

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## System Support

System support encompasses a broad range of services available to every user of Onyx products. Product documentation is complete and concise with "Getting Started" training manuals to 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 as well as answering questions and providing assistance to new users of Onyx products.

Every Onyx product is rigorously tested before being shipped to the customer and carries a 90 day warranty. Should problems develop, however, an extensive system support organization is available for troubleshooting, maintenance and repair services.

# Specifications

Processor	Z8001, 6 MHz, 100+ instructions, DMA		
Memory	256K bytes with byte parity detect, expandable to 512K bytes.		lower case, numeric, line drawing, punctuation); normal, reverse video; blinking, underline, half-intensity, smooth scrolling.
Ports	3 RS-232C, 1 RS-232C with synchronous or asynchronous modem support, 1 8-bit parallel (Centronics compatible) 1 UPS 1 Disk Expansion port	Model 132	selectable 24 lines x 80 columns or 24 lines x 132 columns 7x9 (9x9 in 132 column mode) dot matrix characters with descenders.
Winchester disk	Single 5 1/4-inch drive, 7,14 or 21 bytes (unformatted), 68 Msec average access time, 6.25 Msec average latency time 1M bytes/second transfer rate	Model 80	double-sized characters (double height and/or double width). 24 lines x 80 columns. 7x9 dot matrix characters with descenders.
Magnetic tape	Single 1/4-inch drive, 6250 bpi, 90 ips; 10M bytes capacity (300 foot tape)	Communication	EIA RS-232C, full/half duplex, even/odd/none parity 300, 600, 1200, 2400, 4800, 9600, 19.2K baud; 7/8 bits/character, 1/2 stop bits
Keyboard	67 sculptured keys in standard typewriter format; two key rollover minimum; 18 key auxiliary numeric keypad with period, comma, minus, enter and 4 function keys; 7 LED indicators: 3 status, 4 programmable; 1.6 meter (5.2 feet) coiled cord attaching keyboard to display	Size Monitor Keyboard Weight	37.1 cm (14.6 in) x 46.4 cm (18.3 in) x 36.9 cm (14.5 in) 9.0 cm (3.5 in) x 46.4 cm (18.3 in) x 20.0 cm (7.9 in) 23.2 kg (51.0 lb) Monitor; 2.27 kg (5.0 lb) Keyboard
Display	12-inch (diagonal) non-glare green phosphor screen; 96-character displayable ASCII subset (upper and	Operating Environment Temperature Humidity Electrical	10-40°C (50-104°F) 20%-80% Noncondensing 110 V, 60 Hz; 220 V, 50 Hz 200 watts; detachable power cord 1.9 meter (6 feet)

## 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

contained in the applicable technical manuals, available through local sales representatives.

# Sundance-16

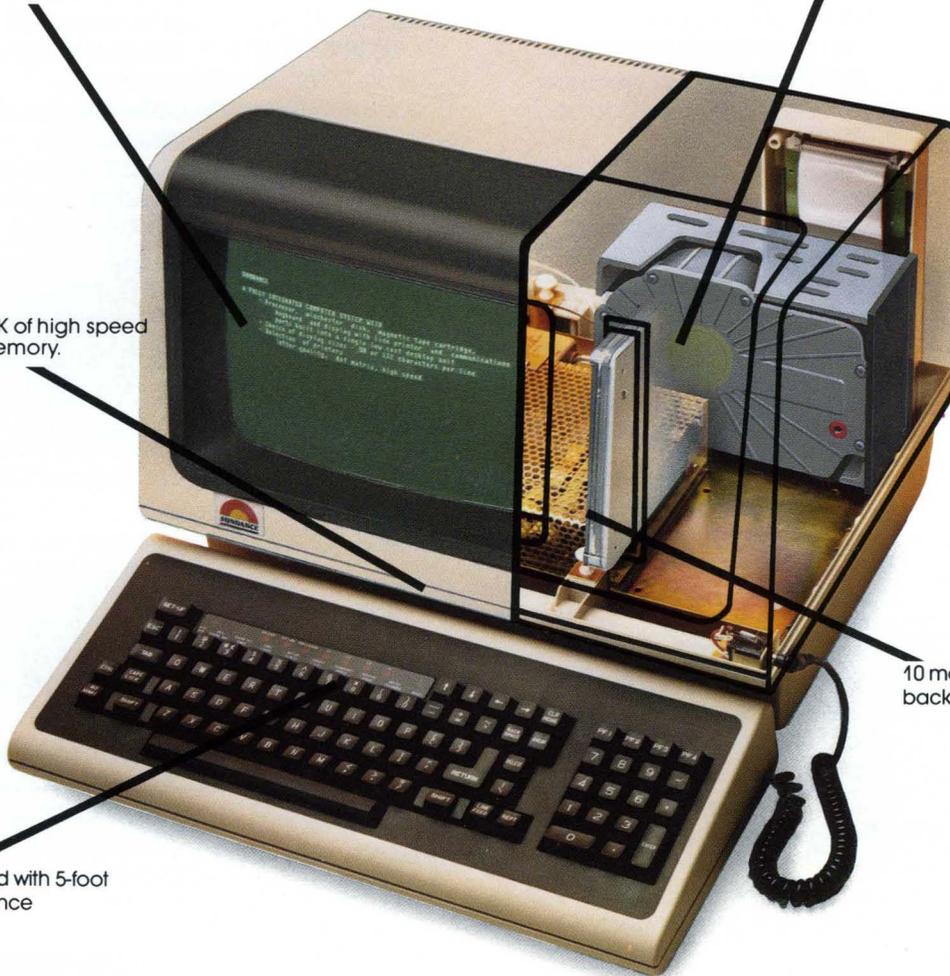
Eye-saving green screen for maximum efficiency in the office environment.

Internal 7, 14 or 21 megabyte Winchester disk for maximum capacity and fast access time.

16-bit CPU with 512K of high speed semiconductor memory.

10 megabyte cartridge tape for backup and program load.

Moveable keyboard with 5-foot coiled for convenience and user comfort.



## Fully Integrated Computer System

- Single integrated low cost desktop unit includes: Processor, Winchester disk, magnetic tape cartridge backup, keyboard and display with printer and communications ports for up to four additional terminals
- Choice of display sizes — 80 or selectable 80/132 character lines.
- Supports letter quality, dot matrix, high speed printers.

## Designed to Grow With The Business

- Supports up to four additional terminals without the need to convert current applications software.

- Choice of disk sizes — 7, 14, or 21 megabytes (unformatted) with add on capability.
- Powerful multi-user UNIX System III Operating System.
- Selection of application languages — BASIC, COBOL, FORTRAN, PASCAL
- Communications, graphics, database management, word processing capabilities.

## Fully Supported Nationwide

- Installation and maintenance available on-site nationwide (U.S.A.)
- Multi-level training program to meet user needs.
- Consultation and assistance by telephone or on-site.
- Software maintenance service.

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