

# GLOSSARY

Message	Meaning
Unrecognized Destination	Check command line for valid destination.
Use: STAT d: = RO	An invalid STAT drive command was given. The only valid drive assignment in STAT is STAT d: = RO.
VERIFY ERROR: -{filespec}	When copying with the V option, PIP found a difference when rereading the data just written and comparing it to the data in its memory buffer. Usually this indicates a failure of either the destination disk or drive.
XSUB ACTIVE	XSUB has been invoked.
XSUB ALREADY PRESENT	XSUB is already active in memory.
Your input?	If CP/M cannot find the command you specified, it returns the command name you entered followed by a question mark. Check that you have typed the command line correctly, or that the command you requested exists as a .COM file on the default or specified disk.

## acoustic coupler

A device which converts digital electrical signals into acoustic signals for transmission over a telephone line, and which converts acoustic signals received over a telephone line into digital signals in a form which can be input by a computer.

## address

A number which is used during data input/output to indicate a location in memory, an input/output port, or a position in an auxiliary storage device. Ordinarily, each byte in memory is indicated by a unique address. There are a variety of addressing schemes, including absolute addresses, relative addresses, and base addresses.

## application program

A program which is used to do work for the user. Contrast with system program. Application programs may be prepared either by software manufacturers or the user himself, and may be written in any language supported by the computer. auxiliary storage - Devices which are used to supplement the computer's main storage, such as floppy disk units, ROM capsules, and magnetic tape.

## ASCII code

An abbreviation for "American National Standard Code for Information Interchange." Uses a data word consisting of 7 bits (8 bits including parity) to represent the letters of the alphabet, numerals, and symbols.

## bank

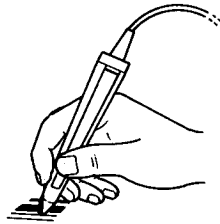
In this book, a 64K byte segment of main memory.

**bar code**

A code which uses groups of vertical bars to represent numbers (and sometimes letters); can be optically scanned for input to a computer using a bar code reader.

**bar code reader**

A device which converts bar code patterns into electrical signals for input to a computer.

**BASIC**

An acronym for "Beginners' All Purpose Symbolic Instruction Code); an interactive programming language whose instructions and syntax closely resemble English.

**bit**

Abbreviated form of "binary digit"; the smallest unit of information handled by a computer. Can have either of two states: 1 or 0.

**bit rate**

The speed with which data bits are transferred during serial data communication through the RS-232C or serial interface; expressed in bits per second (bps). Also sometimes referred to as baud rate.

**blocking**

The process of combining two or more records into one block for output to an external device. The size of one block is predetermined based on factors such as memory size and speed with which data is transmitted to the external device.

**buffer**

An area in memory or a device which is used for temporary storage of data being transferred between two devices.

**bus**

One or more conductors which carry signals from one part of a computer to another.

**byte**

A sequence of bits which are handled by the computer as a unit. In PX-4, one byte consists of 8 bits, and can be used to represent values from 0 to 255. One byte corresponds to one character of text information. A unique address is assigned to each byte in memory, and each memory address can store one 8-bit value.

**close**

The process of ending access to a file. When a file is closed, its buffer can be reassigned to another file.

**cold boot**

With PX-4, the process by which the CP/M operating system is loaded into bank 0 from the system bank and started. A cold boot is made whenever the system initialization is performed or when the reset switch is pressed.

**command**

An instruction to the computer which is entered by the operator from the console (keyboard) or other external device.

**console**

The input/output device which is used for communication between the operator and the computer. With PX-4, the keyboard and LCD screen.

**CP/M**

A registered trademark of Digital Research. The characters stand for "control program for microcomputer". The operating system used in PX-4 and many other microcomputers.

**CPU**

An abbreviation for "central processing unit." The CPU consists of an arithmetic unit and control unit, and is equipped with memory and input/output devices.

**deblocking**

The process of dividing a block of data into several records.

**directory**

A list in memory or in an auxiliary storage medium which contains information needed to manage files in that medium (file names, the lengths of files, file attributes, and file storage locations).

**DIP switch**

A group of switches which are housed in a dual inline package (DIP) for mounting on a printed circuit board.

**entry address**

The address at which execution of a program begins. Program execution can be transferred from one program to another by making a jump or call to a given program's entry address.

**entry parameter**

Information which is passed from one program to another when a program is called. Information is ordinarily passed by placing it in one or more registers or locations in memory.

**entry table**

A table which lists entry addresses to various programs (routines).

**EOF block**

A block written to the end of a magnetic tape file to indicate that file's end.

**even parity**

See parity.

**file**

A group of related records which are handled as a single unit. Ordinarily refers to data stored under a common name on an auxiliary storage device.

**floppy disk**

A disk with a magnetic coating which is housed in a protective jacket and used for recording data. Floppy disks are made in a variety of sizes; some of the sizes which are currently used are 8-inch, 5.25-inch, and 3.5-inch. Floppy disks also vary according to whether one or both sides are used for recording (single sided and double sided), and recording density (single density or double density). Of the floppy disk units which can be used with PX-4, the TF-15 and TF-20 use 5.25-inch double sided, double density disks, while the PF-10 uses 3.5-inch double sided, double density disks.

**formatting**

The process of checking a new floppy disk for defects, preparing a directory area on the disk, and establishing the locations of tracks and sectors on the disk.

**hardware**

The physical components making up a computer; e.g., the CPU, screen and keyboard, and memory.

**interface**

The point at which two systems (such as the computer and the user) meet and interact. With external devices, the circuits and software through which connection is made to the computer. Also may indicate the physical connector through which two or more devices are interconnected.

**item keyboard**

A special keyboard whose keys are all redefinable, making it easy to use PX-4 as a special purpose machine.

**K byte**

Abbreviation for kilobyte.

**kilobyte**

2<sup>10</sup> bytes.

**LED**

An abbreviation for "light emitting diode." Depending on the type of material used in its construction, an LED will emit red, yellow, or green light when voltage is applied to it.

**logical device**

The software interface between the user/computer and a physical device required for data processing (keyboard, screen, printer, disk drive, memory, or line). Use of logical devices makes it possible to select one physical device out of a group for use, and thus eliminates the need for reprogramming when switching from one physical device to another. In other words, the job of switching between physical devices is made the responsibility of system routines which the user can handle as if they were devices.

**machine language program**

A computer program consisting of binary instruction codes which can be directly understood and executed by a computer. Programs written in any programming language must be converted into machine language for execution by some type of conversion program (a compiler or interpreter).

**memory**

A computer's internal storage device. Data stored in memory can be recalled as necessary. Two types of memory are used in computers: random access memory (RAM), which can be both read and written by the computer's user, and read only memory (ROM) which is used for permanent storage of programs and other data.

**modem**

A device (modulator-demodulator) which is used for modulating signals for transmission over a communication line, and for demodulating signals received over such a line. Essential in online systems. Modems which are acoustically linked to the handset of a telephone unit are referred to as acoustic couplers.

**odd parity**

See parity.

**open**

The operation by which a file is prepared for access. When a file is opened, an area in memory is reserved for it which is used as a buffer for data input from or output to the file.

**operating system**

A system of program instructions which controls operation of a computer's hardware and provides an interface between the user and the computer to make it convenient to use. In PX-4, the operating system used is CP/M.

**parameter**

Variables or constants which are acted upon by subroutines or program functions. The result produced by the subroutine or function depends on the value of the parameter(s) specified.

**parity**

A parity bit is included in data transmitted through the RS-232C interface to make it possible for the receiving side to determine whether data received is valid. Either even parity or odd parity may be specified; with even parity, the parity bit is "0" if there is an even number of "1" data bits, and is "1" if there is an odd number of "1" data bits; the opposite is true when odd parity is specified.

**parity check**

A check for data validity the number of "1" bits in a data byte are check against the value of an accompanying parity bit. Also referred to as an odd-even check.

**physical device**

A device which is physically connected to the computer. Actual operation of a physical device is performed using a logical device name which may be assigned to any of several different physical devices.

**power supply**

A device which supplies electrical power to other devices.

**RAM**

Abbreviation for random access memory; i.e., memory whose contents can be changed and retrieved as necessary.

**random access file**

A type of file in which data records in any location can be accessed at any time, regardless of what record was accessed previously.

**record**

A collection of related items of data which are handled as a unit during data processing. A collection of records is referred to as a file.

**register**

A device which is used to store one or two bytes of data. The contents of a register can be read or written at any time. Registers used with the Z-80 microprocessor include the program counter, general registers, index register, and instruction register.

**ROM**

Abbreviation for read only memory; i.e., memory whose contents can be referenced but not changed. There are two general types of ROMs: mask ROMs, whose contents (programs, etc.) are written by the manufacturer at the time of production, and programmable ROMs (PROMs), which can be written by the user. PX-4 BASIC is provided in the form of a mask ROM.

**scroll**

Vertical or horizontal movement of all data displayed on the display screen.

**sequential file**

A file in which constituent records are recorded in a fixed order. Records in a sequential file can only be read in the order in which they were written when the file was created.

**software**

The program instructions which control operation of a computer.

**subroutine**

A subprogram which is called from some other point in the program being executed. A subroutine can be called from any point in the program; when subroutine execution is completed, execution resumes with the program instruction following the point at which the subroutine call was made. Use of subroutines helps make programs easier to read and debug and helps reduce the amount of memory required to do processing which is required at various points in the program. With BASIC programs, subroutines are called using the GOSUB statement; with machine language programs, calls are made using the CALL instruction.

**system initialization**

The process of establishing the system operating environment (such as type of printer) and system parameters such as the date/ time and RAM disk size.

**terminal**

An input/output device used for communicating with a central computer over a communication line. Ordinarily, data input from the keyboard of a terminal is transmitted to the central computer, and data received by the terminal from the central computer is displayed on the terminal's display screen.

**transient command**

Utility programs which are loaded into memory each time they are executed and which perform specific system-related functions, such as system initialization, file directory display, or transfer of files from one device to another.

**user**

In this manual, the person who uses a computer. Also sometimes used to refer to a program which utilizes the hardware and software resources of a computer system.

**verify**

The process of rereading data which has been written to an external storage device and comparing it with the original to ensure that it has been stored properly.

**virtual screen**

An area in memory whose contents can be viewed through the LCD screen. Provides a virtual display area whose dimensions exceed the physical capacity of the LCD screen. (See also: window screen.)

**VRAM**

Abbreviation for "video RAM." VRAM is an area in main memory which is used for storing characters and graphics which are displayed on the screen. With PX-4, the contents of VRAM can be accessed directly by the user.

**window screen**

An imaginary "window" through which the contents of the virtual screen are displayed on the LCD screen. Can be moved around to view different parts of the virtual screen.

### warm boot

The processing of reloading part of the CP/M operating system into bank 0 from the system bank and initializing the various parts of CP/M. Initiated by pressing **CTRL** + **C** or the **STOP** key.

### Z-80

An 8-bit microprocessor which was developed by the Zilog Corporation of the United States and which is used as the CPU in many of today's 8-bit microcomputers.

## Index

### A

ABORTED, G-1  
AC adapter, 1-4  
Acoustic coupler, 4-16  
    connection, 4-16  
A/D conversion, 4-9  
Alarm function, 2-48  
ALARM, 2-49  
    setting, 2-49  
ALARM string, 2-50  
Arrow keys, 2-13, 2-28  
Alphanumeric keys, 2-13  
ASCII codes, D-1  
AUTO POWER OFF time, 2-61, 5-2  
Autostart, 2-48  
AUTOST, C-25  
AUTOSTART, 2-57  
AUTOSTART string, 2-57, 2-59

### B

BAD DELIMITER, G-2  
Bad load, G-2  
Bank read current, C-14  
Bar code reader, 4-15  
BASIC, 1-20, 2-7  
    from the MENU, 2-7, 2-35, 2-45  
    restarting from CP/M command line, 2-40, 2-41  
    setting parameters, 2-59  
Basic Disk Operating System (BDOS), 1-22  
Battery, 2-89  
    charging, 2-89  
    charge Time, 2-9  
    installation, 2-1, 2-90  
    replacing, 2-90  
BDOS, 1-22  
Bdos error on d:, G-2  
Bdos error on d: bad sector, G-2  
Bdos error on d: file R/O, G-2  
Bdos error on d: select, G-2  
BEEP subroutine, C-8