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The Computer Desktop Encyclopedia

ALAN FREEDMAN

Author of the Leading Dictionary of Computer Terms:
THE COMPUTER GLOSSARY

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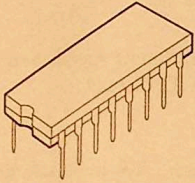
the computer employ stick modeling to analyze the movement of athletes as well as racing horses.

bionic

A machine that is patterned after principles found in humans or nature; for example, robots. It also refers to artificial devices implanted into humans replacing or extending normal human functions.

BIOS

(Basic Input Output System) Detailed instructions that activate peripheral devices. Although BIOSs have been around for more than 30 years, today, the term generally refers to the BIOS in a PC, which holds certain fundamental parts of the operating system. A PC's BIOS has traditionally been stored in a permanent ROM chip and is often referred to as the ROM BIOS. Increasingly, the PC's BIOS is built into a flash memory chip, which can be updated in place by installing the latest version of the routines just like one updates a software application.

The motherboard contains a system BIOS, and expansion cards often have their own BIOSs. The system BIOS includes routines for the keyboard, screen, disk, parallel and serial port and for internal services such as time and date. It accepts requests from the device drivers in the operating system as well as from application programs. It also contains an autostart routine that tests the system on startup and prepares the computer for operation. It searches for BIOSes on the plug-in boards and sets up pointers (interrupt vectors) in memory to access BIOS routines. It then loads the operating system and passes control to it.

System BIOSs prior to 1990 may not be compatible with new software and peripherals. In order to use devices such as 3.5" diskettes, 101-key keyboards, IDE and Enhanced IDE drives as well as provide compatibility with Windows, NetWare and other applications, you can upgrade an older PC with a new BIOS. The following firms specialize in BIOS upgrades:

UNICORE SOFTWARE   800/800-BIOS
1538 Turnpike St.
N. Andover, MA 01845

UPGRADES, ETC.   800/955-3527
2432-A Palma Drive
Ventura, CA 93003

bipolar

A category of high-speed microelectronic circuit design, which was used to create the first transistor and the first integrated circuit. The most common variety of bipolar chip is TTL (transistor transistor logic). Emitter coupled logic (ECL) and integrated injection logic (I2L) are also part of the bipolar family.

Today, bipolar and CMOS are the two major transistor technologies. Most all personal computers use CMOS, and even large mainframes that have traditionally used bipolar have given way to CMOS designs. CMOS uses far less energy than bipolar.

However, bipolar transistors are still widely used for high radio frequency (RF) applications that reach into the gigahertz range, which CMOS technology cannot handle.

The bipolar transistor works by pulsing a line called the *base*, which allows current to flow from the *emitter* to the *collector*, or vice versa depending on the design.

bipolar transmission

A digital transmission technique that alternates between positive and negative

COMPUTERS

$39.95

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Everyone who loved the "Rolls Royce of computer dictionaries"— which is what one reviewer called *The Computer Glossary* — will welcome Alan Freedman's magnum opus on computers and computing, *The Computer Desktop Encyclopedia*.

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- Industry history and data on the movers and shakers
- Standards and compatibility
- Networking and communications
- Workstations, parallel processing, and UNIX
- Multimedia and optical storage
- The Internet and World Wide Web
- What's hot, what's not

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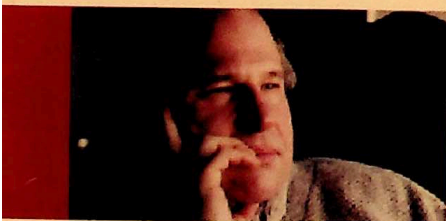
Alan Freedman is president of The Computer Language Company, an organization devoted to computer education and training for business and nontechnical people. Mr. Freedman has more than 35 years of experience in the field, and is internationally known for making abstract computer concepts understandable for nontechnical people.

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