

**The New IEEE Standard Dictionary
of Electrical and Electronics Terms**
[Including Abstracts of All Current IEEE Standards]

Fifth Edition

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and $B = 0, 1, 2, 3$, or 4 ; for example, decimal 7 is represented by biquinary 12 . This system is sometimes called a mixed-radix system having the radices 2 and 5 . [85]

biquinary code. A two-part representation of decimal digits consisting of a binary portion with values 0 or 5 and a quinary portion with values 0 through 4 . For example, decimal digit 7 is coded as 12 . 610.1

biquinary coded decimal. Pertaining to a number representation system in which each decimal digit is represented by a biquinary code. 610.1

biquinary notation. Any notation that uses the biquinary code to represent numbers. 610.1

biquinary numeration system. A numeration system that alternately uses 2 and 5 as bases. *Note:* The abacus uses a biquinary system. 610.1

birefringence. *See:* birefringent medium.

birefringent medium (fiber optics). A material that exhibits different indices of refraction for orthogonal linear polarizations of the light. The phase velocity of a wave in a birefringent medium thus depends on the polarization of the wave. Fibers may exhibit birefringence. *See:* refractive index (of a medium). 812-1984

BISAM. Acronym for basic indexed sequential access method. 610.5-1990

bisection. *See:* binary search. 610.5-1990

bistable (1) (general). The ability of a device to assume either of two stable states. [60]
(2) (industrial control). Pertaining to a device capable of assuming either one or two stable states. *See:* control system, feedback. [85]

bistable amplifier (industrial control). An amplifier with an output that can exist in either of two stable states without a sustained input signal and can be switched abruptly from one state to the other by specified inputs. *See:* control system, feedback; rating and testing magnetic amplifiers. [60]

bistable logic function (graphic symbols for logic functions). A sequential logic function that has two and only two internal output states. *Syn:* flip-flop. 91-1984

bistable operation. Operation of a charge-storage tube in such a way that each storage element is inherently held at either of two discrete equilibrium potentials. *Note:* Ordinarily this is accomplished by electron bombardment. *See:* charge-storage tube. 158-1962w

bistatic cross section (antennas). The scattering cross section in any specified direction other than back toward the source. *See:* monostatic cross section; radar cross section. 145-1983

bistatic cross section. *See:* radar cross section.

bistatic radar. A radar using antennas at different locations for transmission and reception. 686-1982

bit (1) (microprocessor operating systems). A contraction of the term "binary digit;" a unit of information represented by either a zero or a one. 729-1983, 855-1985

(2) (supervisory control, data acquisition, and automatic control). (A) *least significant.* In an n -bit binary word its contribution is $(0$ or $1)$ toward the maximum word value of $(2n-1)$. (B) *most significant.* In an n -bit binary word its contribution is $(0$ or $1)$ times $2(n-1)$ toward the maximum word value of $(2n-1)$. C37.1-1987
(3) (data transmission). (A) An abbreviation of "binary digit." (B) A single occurrence of a character in a language employing exactly two kinds of characters. (C) A unit of storage capacity. The capacity, in bits, of a storage device with logarithm to the base two of the number of possible states of the device. 599-1985w

(4) (information theory). A unit of information content equal to the information content of a message the *a priori* probability of which is one-half. *Note:* If, in the definition of information content, the logarithm is taken to the base two, the result will be expressed in bits. One bit equals $\log_{10} 2$ hartley. *See:* information theory; check bit; parity bit. [7]

(5) (electronic computers). (A) An abbreviation of binary digit. (B) A single occurrence of a character in a language employing exactly two distinct kinds of characters. (C) A unit of storage capacity. The capacity, in bits, of a storage device is the logarithm to the base two of the number of possible states of the device. *See:* storage capacity. [2], 162-1963

(6). A binary digit (b). 1296-1987

(7). A unit of information in the binary numeration system. Also a unit of storage capacity of a memory. 641-1988

(8). Acronym for binary digit. 610.1, 610.5-1990, 610.6-1991, 610.12-1990

bit cell. The time interval used for the transmission of a single data (CD0 or CD1) or control (CVH or CVL) symbol. 802.3b,c,d,e-1989

bit error (1). A bit is said to be in error when it is transferred from the source to the destination within the assigned timeslot, but the delivered bit is of a different value than that sent from the source. 1007-1991

(2). *See:* error rate.

bit error rate. The rate of errors to the total number of bits being sent in a data transmission from one location to another. 802.7-1989

bit-error ratio (BER). The ratio of the number of bit errors to the total number of bits transmitted in a given time interval. BER may