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IEEE Standards Terms

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- (2) (**analog computer**) (of an operational amplifier) The act of adjusting the output level of an operational amplifier to coincide with its input reference level, usually ground or zero voltage, in the "balance check" computer-control state. This operation may not be required in some amplifiers, and there may be no provision for performing it. (C) 165-1977w
- balancing network** An electric network designed for use in a circuit in such a way that two branches of the circuit are made substantially conjugate; that is, such that an electromotive force inserted in one branch produces no current in the other branch. *See also:* network analysis. (PE) 599-1985w
- ballast (1) (fluorescent lamps or mercury lamps)** Devices that by means of inductance, capacitance, or resistance, singly or in combination, limit the lamp current of fluorescent or mercury lamps to the required value for proper operation, and also, where necessary, provide the required starting voltage and current and, in the case of ballasts for rapid-start lamps, provide for low-voltage cathode heating. *Note:* Capacitors for power-factor correction and capacitor-discharge resistors may form part of such a ballast. (EEC/LB) [95], [94]
- (2) (**fixed-impedance type**) (reference ballast) Designed for use with one specific type of lamp that, after adjustment during the original calibration, is expected to hold its established impedance through normal use. (EEC/LB) [96], [97]
- (3) (**variable-impedance type**) An adjustable inductive reactor and a suitable adjustable resistor in series. *Note:* These two components are usually designed so that the resulting combination has sufficient current-carrying capacity and range of impedance to be used with a number of different sizes of lamps. The impedance and power factor of the reactor-resistor combination are adjusted, or rechecked, each time the unit is used. (EEC/LB) [96], [97]
- (4) (**illuminating engineering**) A device used with an electric-discharge lamp to obtain the necessary circuit conditions (voltage, current, and wave form) for starting and operating. (EEC/IE) [126]
- (5) (**electric power systems in commercial buildings**) An electrical device that is used with one or more discharge lamps to supply the appropriate voltage to a lamp for starting, to control lamp current while it is in operation, and, usually, to provide for power factor correction. (IA/PSE) 241-1990r
- ballast factor (illuminating engineering)** The fractional loss of task illuminance due to use of a ballast other than the standard one. (EEC/IE) [126]
- ballast leakage** The leakage of current from one rail of a track circuit to another through the ballast, ties, earth, etc. (EEC/PE) [119]
- ballast resistance** The resistance offered by the ballast, ties, earth, etc., to the flow of leakage current from one rail of a track circuit to another. (EEC/PE) [119]
- ballast section (railroads)** The section of material, generally trap rock, that provides support under railroad tracks. (NESC) C2-1997
- ballast tube (ballast lamp)** A current-controlling resistance device designed to maintain substantially constant current over a specified range of variation in the applied voltage or the resistance of a series circuit. (EEC/PE) [119]
- ball bearing (rotating machinery)** A bearing incorporating a peripheral assembly of balls. *See also:* bearing. (PE) [9]
- ball burnishing** Burnishing by means of metal balls. *See also:* electroplating. (EEC/PE) [119]
- ballistic deficit (germanium gamma-ray detectors)** The loss in signal amplitude that occurs when the charge collection time in a detector is a significant fraction of the amplifier's differentiating time constant. (NPS) 325-1996
- ballistic focusing (microwave tubes)** A focusing system in which static electric fields cause an initial convergence of the beam, and the electron trajectories are thereafter determined by momentum and space charge forces only. (ED) [44]
- ballistic munition** Any munition that follows a ballistic trajectory. (DIS/C) 1278.1-1995
- ball lightning** A type of lightning discharge reported from visual observations to consist of luminous, ball-shaped regions of ionized gases. *Note:* In reality ball lightning may or may not exist. *See also:* direct-stroke protection. (T&D/PE) [10]
- balun (1)** In networking, a passive device with distributed electrical constants used to couple a balanced system or device to an unbalanced system or device. For example, a transformer used to connect balanced twisted-pair cables to unbalanced coaxial cables. *Note:* Derived from "balance to unbalance" transformer. (C/CHM) 610.7-1995, [51]
- (2) A network for the transformation from an unbalanced transmission line or system to a balanced line or system, or vice versa. (IM/HFIM) [40]
- BAM** *See:* basic access method.
- banana plug** A single-conductor plug with a spring metal tip that somewhat resembles a banana in shape. (IM) [120]
- band (1)** A group of circular recording tracks, on a moving storage device such as a drum or disc. *See also:* channel. (C/MIL) [2]
- (2) (**data transmission**) Range of frequency between two defined limits. (PE) 599-1985w
- (3) A group of tracks on a magnetic drum or a magnetic disk which are read or written as a group. (C) 610.10-1994w
- band I** The frequency band 5 Hz to 2 kHz. (EMC) 1140-1994r
- band II** The frequency band 2 kHz to 400 kHz. (EMC) 1140-1994r
- band-edge** The highest or lowest frequency passed for a defined range of frequencies. The band-edge frequencies are normally identified to be the half power points of a frequency band. (LM/C) 802.7-1989r
- band, effective** *See:* effective band.
- band-elimination filter (1)** A network designed to eliminate a band or frequencies. Its frequency response has a single pass band bounded by two attenuation bands. (CAS) [13]
- (2) (**signal-transmission system**) A filter that has a single attenuation band, neither of the cutoff frequencies being zero or infinite. *See also:* filter; rejection filter. (SP/PE) 151-1965w, 599-1985w
- band gap (charged-particle detectors) (in a semiconductor)** The energy difference between the bottom of the conduction band and the top of the valence band. (NPS) 325-1996, 300-1988r
- banding insulation (rotating machinery)** Insulation between the winding overhang and the binding bands. (PE) [9]
- band of regulated voltage (synchronous machines)** The band or zone, expressed in percent of the rated value of the regulated voltage, within which the excitation system will hold the regulated voltage of an electric machine during steady or gradually changing conditions over a specified range of load. (PE/EDPG) 421-1972s, 421.1-1986r
- band-pass (broadband local area networks)** A range of frequencies that express the difference between the lowest and highest frequencies of interest. The band-pass frequencies are normally associated with frequencies that define the half power points. (LM/C) 802.7-1989r
- band-pass filter (1) (data transmission)** A wave filter that has a single transmission band, neither of the cutoff frequencies being zero or infinite. *See also:* optical filter. (PE) 599-1985w
- (2) (**broadband local area networks**) A filter that allows passage of a desired range of frequencies and attenuates frequencies outside the desired range. (LM/C) 802.7-1989r
- band-pass tube** *See:* broadband tube.
- band pressure level** For a specified frequency band, the sound pressure level for the sound contained within the restricted band. The reference pressure must be specified. *Note:* The band may be specified by its lower and upper cutoff frequencies or by its geometric center frequency and bandwidth. The width of the band may be indicated by a modifying prefix,

(2) The bit of material resulting from punching a hole in a paper card or tape. *Synonym:* chip. (C) 610.10-1994w

chadded Pertaining to the punching of tape in which chad results. (C) [20], [85]

chadless Pertaining to the punching of tape in which chad does not result. (MIL/C) [2], [85], [20]

chadless tape (1) A punched tape wherein only partial perforation is completed and the chad remains attached to the tape. (IA) [61]

(2) Perforated tape that has been punched in such a way that chad is not formed. (C) 610.10-1994w

chaff Strips of lightweight metal or metallized material that are dispensed in large numbers (bundles) so as to simulate a true target, or, more usually, to create a large clutter signal that masks the detection of wanted targets. *Notes:* 1. Each bundle may contain thousands of individual reflectors whose lengths are related to the wavelength of the radar. 2. Chaff for use at HF and VHF frequencies is sometimes called "rope." 3. During WWII, chaff was called "window" in Great Britain and "Dueppel" in Germany. (AES) 686-1997

chafing strip *See:* drive strip.

chain (1) (navigation aids) A network of similar stations operating as a group for determination of position or for furnishing navigational information. (AES/GCS) 172-1983w

(2) (mathematics of computing) A sequence of bits used to construct a binary code. *See also:* chain code. (C) 1084-1986w

(3) (data management) *See also:* linked list. (C) 610.5-1990w

chain binder *See:* binder load.

chain code An arrangement in a cyclic sequence of some or all of the possible different n -bit words in which adjacent words are related such that each word is derivable from its neighbor by displacing the bits one place to the left or right, dropping the leading bit, and inserting a bit at the end. The value of the inserted bit needs only to meet the requirement that a word must not recur before the cycle is complete. For example, 000 001 010 101 011 111 110 100 000. . . (C) [20], 1084-1986w, [85]

chain-drive machine (elevators) An indirect-drive machine having a chain as the connecting means. *See also:* driving machine. (EEC/PE) [119]

chained list (1) (software) A list in which the items may be dispersed but in which each item contains an identifier for locating the next item. *Synonym:* linked list. *See also:* list; identifier. (C/SE) 729-1983s

(2) (data management) *See also:* linked list. (C) 610.5-1990w

chain field *See:* link field.

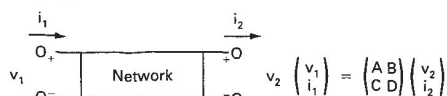
chain hoist *See:* hoist.

chaining (1) A method for storing records in which each record has a link field that is used to access subsequent records. (C) 610.5-1990w

(2) A mode of interaction optionally used by a DSA that cannot perform a directory operation itself; the DSA chains by invoking a directory operation of another DSA and then relaying the outcome to the original requester. (C/PA) 1328.2-1993w, 1326.2-1993w, 1327.2-1993w, 1224.2-1993w

chaining search A search in which each item contains a means for locating the next item to be considered in the search. (C) 610.5-1990w

chain matrix The 2×2 matrix relating voltage and current at one port of a two-port network to voltage and current at the other port.



chain matrix

(CAS) [13]

chain printer An element printer in which the type slugs are carried by the links of a revolving chain, called a print chain. (C) 610.10-1994w

chain tugger *See:* hoist.

chain-type conveyor A conveyor using a driven endless chain or chains, equipped with flights that operate in a trough and move material along the trough. *See also:* conveyor. (EEC/PE) [119]

chair, boatswain *See:* boatswain's chair.

chalking (1) (composite insulators) The powdered surface on weathersheds consisting of particles of filler resulting from ultraviolet exposure. (T&D/PE) 987-1985w

(2) The development of loose removable powder at or just beneath a coating surface. (IA) [59]

(3) The powdered surface on the polymeric insulator consisting of particles of filler resulting from ultraviolet exposure or leakage current activity. (PE/IC) 48-1996

challenge (navigation aids) To cause an interrogator to transmit a signal which puts a transponder into operation. *See also:* interrogation. (AES/GCS) 172-1983w

change control *See:* configuration control.

change control board *See:* configuration control board.

change detection An image processing technique in which the pixels of two registered images are compared to detect differences. (C) 610.4-1990w

change dump A selective dump of those storage locations whose contents have changed since some specified time or event. *Synonym:* differential dump. *See also:* dynamic dump; snapshot dump; static dump; selective dump; memory dump; postmortem dump. (C) 610.12-1990

change-of-frame alignment A state that occurs when an off-line framer realigns the receiver to the proper frame alignment signal. *See also:* out-of-frame condition. (COM/TA) 1007-1991r

change of state (COS) A significant change (as defined by a particular system) in the condition of a point being monitored, for example, a change in flow rate, temperature, voltage, etc. Usually associated with dual-status (that is, alarm/normal conditions). (PE/SUB) 1379-1997

change-over selector A device designed to carry, but not to make or break current, used in conjunction with a tap selector or arcing tap switch to enable its contacts, and the connected taps, to be used more than once when moving from one extreme position to the other. (PE/TR) C57.131-1995

change recording *See:* nonreturn-to-zero (change) recording.

changeover switch A switching device for changing electric circuits from one combination to another. *Note:* It is usual to qualify the term "changeover switch" by stating the purpose for which it is used, such as a series-parallel changeover switch, trolley-shoe changeover switch, etc. *See also:* multiple-unit control. (EEC/PE) [119]

change transaction A transaction that causes information in a master file to be changed. *See also:* delete transaction; add transaction; update transaction; null transaction. (C) 610.2-1987

CHANHI Abbreviation for upper channel corresponding to the half-amplitude point of a distribution. (NPS) 398-1972r

CHANLO Abbreviation for lower channel corresponding to the half-amplitude point of a distribution. (GSD) 200-1975w

Channel A control or data path established between two buses that allows information to flow from one bus to the other. The Channels specific to this standard are the CSR channels, the F2V and V2F data channels, the event channel, and the dual port memory Channel. (C/BA) 1014.1-1994w

channel (1) (A) (electric communication) A single path for transmitting electric signals, usually in distinction from other parallel paths. (B) (electric communication) A band of frequencies. *Note:* The word "path" is to be interpreted in a broad sense to include separation by frequency division or time division. The term "channel" may signify either a one-way path, providing transmission in one direction only, or a

two-way path, providing transmission in two directions.

(EEC/PE) [119], 599-1985

(2) (A) A path along which signals can be sent, for example, data channel, output channel. (B) The portion of a storage medium that is accessible to a given reading station. *See also*: track. (C) 162-1963

(3) A combination of transmission media and equipment capable of receiving signals at one point and delivering related signals at another point. *See also*: information theory.

(IT) 171-1958w

(4) (**illuminating engineering**) An enclosure containing the ballast, starter, lamp holders, and wiring for a fluorescent lamp, or a similar enclosure on which filament lamps (usually tubular) are mounted. (EEC/IE) [126]

(5) (**nuclear power generating station**) An arrangement of components and modules as required to generate a single protective action signal when required by a generating station condition. A channel loses its identity where single protective action signals are combined.

(PE/NP) 379-1994, 338-1987r, 603-1998

(6) (**metal-nitride-oxide field-effect transistor**) A surface layer of carriers connecting source and drain in an insulated-gate field-effect transistor (IGFET). This channel was formed by inversion with the help of a gate voltage, or by the presence of charges in the gate insulator, or by deliberate doping of the region. (ED) 581-1978w

(7) A band of frequencies dedicated to a certain service transmitted on the broadband medium.

(LM/C) 610.7-1995, 802.3u-1995s

(8) (**broadband local area networks**) The bandwidth required for the transportation of a signal. The bandwidth will vary according to the information being transported. A band of frequencies dedicated to a certain service transmitted on a broadband medium. (LM/C) 802.7-1989r

(9) (**speech telephony**) A means of one-way or two-way transmission provided by a vendor between two defined interface points. (The customer can realize a connection by connecting together channels from one or more vendors.) *Notes*: 1. "Provided by a vendor" means responsibility for the service and does not necessarily mean ownership of facilities. 2. Channels are provided either dedicated or switched. A dedicated channel may be a non-switched channel for the exclusive use of a customer for a contracted time period. A switched channel may be a channel established (set up and released) under customer control. 3. A channel may consist of two or more equipment items, such as transmission facilities, switching systems, etc. *See also*: connection.

(COM/TA) 823-1989w

(10) A logically independent data path between two Functions. Multiple channels can be used to reach different Functions or to represent independent instances of inter-unit communication (e.g., X.25 connections, I/O operations on different discs, datagrams to different network SAPs, etc.). Channels can either be provided by physically separate queues or by multiplexing a shared queue.

(C/MM) 1212.1-1993

(11) (A) A one-way path for transmission of signals between two or more points; for example, a data channel. *See also*: line; circuit; link. (B) In data transmission, either one-way path, providing transmission in one direction only, or two-way path, providing transmission in two directions. *Synonyms*: path. (C) 610.7-1995

(12) (A) A one-way path for transmission of signals between two or more points; for example, an output channel or a data channel. *Synonyms*: link; path; line. *See also*: circuit. (B) The portion of a storage medium that is accessible to a given reading or writing station, such as a track, or a band. (C) A two-way communications path between the central processor and its peripheral devices. (C) 610.10-1994

(13) The tester electronics associated with a digital input/output (I/O) pin that either drives or senses a particular node on the unit under test (UUT). (SCC20) 1445-1998

(14) The data path from any transmitting MIC to the next downstream receiving MIC. (LM/C) 8802-5-1998

(15) A single-flow path for digital data or an analog signal, usually in distinction from other parallel paths. An IEEE 1451.2 channel provides a path for a single commodity or logical state, either real or virtual, using a single data model and a single set of physical units. (IM/ST) 1451.2-1997

(16) An instance of medium use for the purpose of passing protocol data units (PDUs) that may be used simultaneously, in the same volume of space, with other instances of medium use (on other channels) by other instances of the same physical layer (PHY), with an acceptably low frame error ratio due to mutual interference. Some PHYs provide only one channel, whereas others provide multiple channels. Examples of channel types are as shown in the following table:

Single channel	n-channel
Narrowband radio-frequency (RF) channel	Frequency division multiplexed channels
Baseband infrared	Direct sequence spread spectrum (DSSS) with code division multiple access

(C/LM) 8802-11-1999

(17) A physical or logical communication link to a single transducer or to a group of transducers considered as a single transducer. (IM/ST) 1451.1-1999

(18) (**overhead power lines**) *See also*: frequency band.

(T&D/PE) 539-1990

(19) *See also*: communication channel.

(SUB/PE) 999-1992w

channel address The portion of a full data transport address that specifies the channel to which the read or write is directed. (IM/ST) 1451.2-1997

channel-attached terminal A terminal that is connected directly to the computer by wires or cables. *Synonym*: locally-attached terminal. *Contrast*: link-attached terminal.

(C) 610.10-1994w

channel bank A device that multiplexes high-speed communication circuits into lower-speed communication channels; used primarily to digitize analog voice transmission.

(C) 610.7-1995

channel-busy tone (telephone switching systems) A tone that indicates that a server other than a destination outlet is either busy or not accessible. (COM) 312-1977w

channel calibration The adjustment of channel output such that it responds, with acceptable range and accuracy, to known values of the parameter that the channel measures, and the performance of a functional test. (PE/NP) 338-1987r

channel capacity (1) (data transmission) The maximum possible information rate through a channel subject to the constraints of that channel. *Note*: Channel capacity may be either per second or per symbol. (PE) 599-1985w

(2) (**software**) The maximum amount of information that can be transferred on a given channel per unit of time; usually measured in bits per second or in baud. *See also*: memory capacity; storage capacity. (C) 610.12-1990

channel check A qualitative assessment of performance carried out at designated intervals to determine if all elements of the channel are operating within their designated limits.

(PE/NP) 338-1987r

channel failure alarm (power-system communication) A circuit to give an alarm if a communication channel should fail. *See also*: power-line carrier. (PE) 599-1985w

channel group (data transmission) A number of channels regarded as a unit. *Note*: The term is especially used to designate part of a larger number of channels. (PE) 599-1985w

channel groupings Manufacturer specifications that define the inherent relationships between the channels of a multichannel Smart Transducer Interface Module. This grouping information is not normally used by the Smart Transducer Interface Module itself. This information will normally be used by Network Capable Application Processor applications to properly compose human readable displays or in formulating other