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**COVERS EVERY DISCIPLINE OF  
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**PROVIDES SYNONYMS, ACRONYMS, AND ABBREVIATIONS**

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**Dictionary of  
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1 2 3 4 5 6 7 8 9 0    DOC/DOC    0 9 8 7 6 5 4

ISBN 0-07-144210-3



This book is printed on recycled, acid-free paper containing a minimum of 50% recycled, de-inked fiber.

This book was set in Helvetica Bold and Novarese Book by TechBooks, Fairfax, Virginia. It was printed and bound by RR Donnelley, The Lakeside Press.

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#### **Library of Congress Cataloging-in-Publication Data**

McGraw-Hill dictionary of electrical and computer engineering.

p.    cm.

ISBN 0-07-144210-3

1. Computer engineering—Dictionaries.    2. Electric engineering—Dictionaries.

TK7885.A2M37    2004

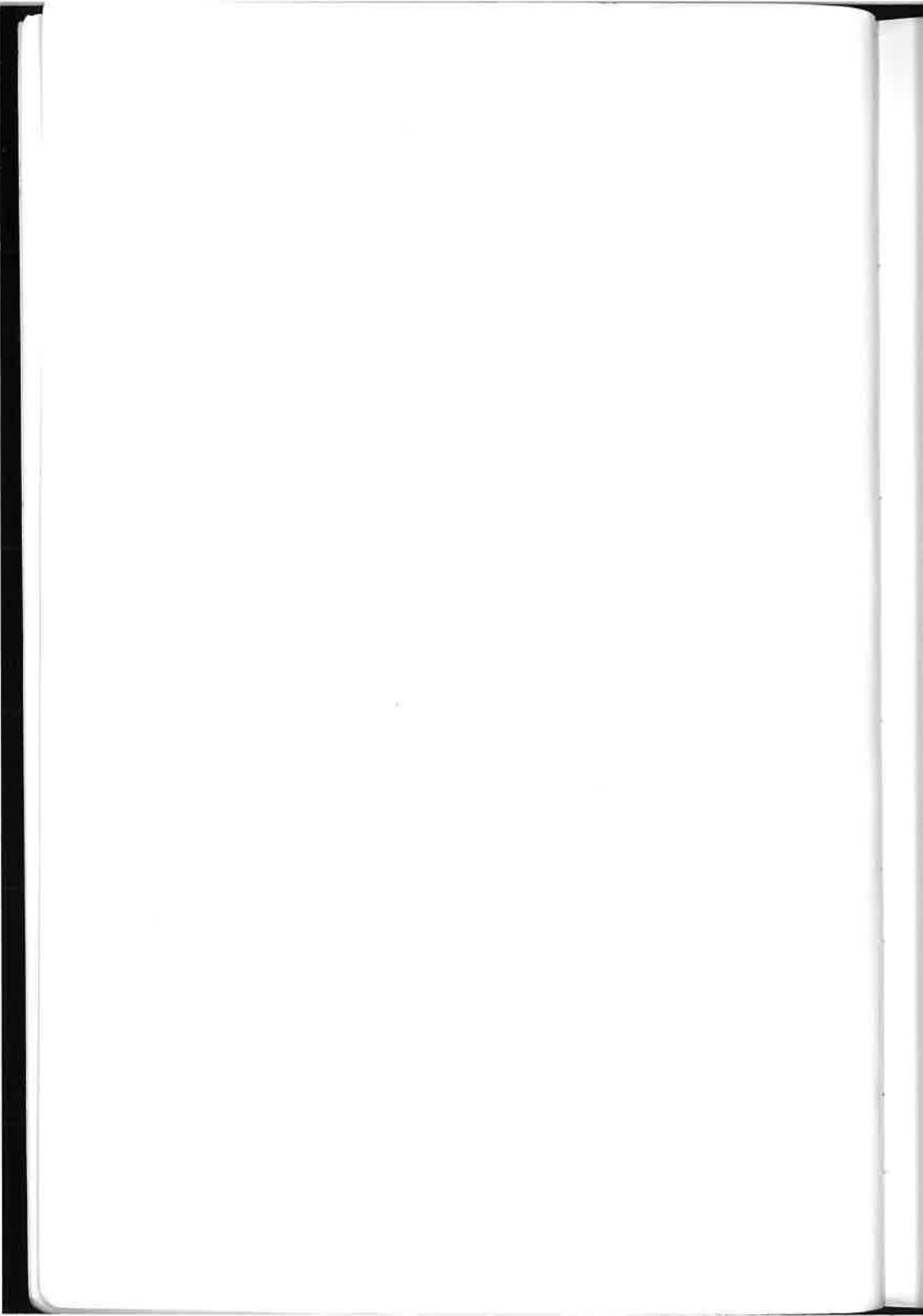
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# Preface

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The *McGraw-Hill Dictionary of Electrical and Computer Engineering* provides a compendium of more than 18,000 terms that are central to these fields as well as related fields. In addition to computer science, electronics, electricity, and electrical engineering, coverage includes terminology in control systems, engineering acoustics, systems engineering, and communications.

The definitions are drawn from the *McGraw-Hill Dictionary of Scientific and Technical Terms*, Sixth Edition (2003). Each one is classified according to the field with which it is primarily associated. The pronunciation of each term is provided along with synonyms, acronyms, and abbreviations where appropriate. A guide to the use of the *Dictionary* is included, explaining the alphabetical organization of terms, the format of the book, cross referencing, and how synonyms, variant spellings, abbreviations, and similar information are handled. A pronunciation key is also provided to assist the reader. An extensive appendix provides conversion tables for commonly used scientific and technical units as well as charts, a "family tree" of programming languages, and listings of useful mathematical, engineering, and scientific data, laws, and equations.

It is the editors' hope that this dictionary will serve the needs of scientists, engineers, specialists in information technology, students, teachers, librarians, and writers for high-quality information, and that it will contribute to scientific literacy and communication.

**Mark D. Licker**  
Publisher

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# How to Use the Dictionary

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**ALPHABETIZATION.** The terms in the McGraw-Hill Dictionary of Electrical and Computer Engineering are alphabetized on a letter-by-letter basis; word spacing, hyphen, comma, and solidus in a term are ignored in the sequencing. For example, an ordering of terms would be:

<b>absolute-value computer</b>	<b>airborne radar</b>
<b>absolute vector</b>	<b>air capacitor</b>
<b>accuracy control system</b>	
<b>ac/dc receiver</b>	

**FORMAT.** The basic format for a defining entry provides the term in boldface, the field in small capitals, and the single definition in lightface:

**term** [FIELD] Definition.

A field may be followed by multiple definitions, each introduced by a boldface number:

**term** [FIELD] **1.** Definition. **2.** Definition. **3.** Definition.

A term may have definitions in two or more fields:

**term** [COMMUN] Definition. [COMPUT SCI] Definition.

A simple cross-reference entry appears as:

**term** See another term.

A cross reference may also appear in combination with definitions:

**term** [COMMUN] Definition. [COMPUT SCI] See another term.

**CROSS REFERENCING.** A cross-reference entry directs the user to the defining entry. For example, the user looking up "chroma band-pass amplifier" finds:

**chroma band-pass amplifier** See burst amplifier.

The user then turns to the "B" terms for the definition. Cross references are also made from variant spellings, acronyms, abbreviations, and symbols.

**ACK** See acknowledge character.

**A-O-I gate** See AND-OR-INVERT gate.

**bps** See bit per second.

**chip** See microchip.

**ALSO KNOWN AS . . . , etc.** A definition may conclude with a mention of a synonym of the term, a variant spelling, an abbreviation for the term, or other such information, introduced by "Also known as . . .," "Also spelled . . .," "Abbreviated . . .," "Symbolized . . .," "Derived from . . . ." When a term has more than one definition, the positioning of any of these phrases conveys the extent of applicability. For example:

**term** [COMPUT SCI] **1.** Definition. Also known as synonym. **2.** Definition. Symbolized T.

In the above arrangement, "Also known as . . ." applies only to the first definition; "Symbolized . . ." applies only to the second definition.

**term** [COMMUN] **1.** Definition. **2.** Definition. [COMPUT SCI] Definition. Also known as synonym.

In the above arrangement, "Also known as . . ." applies only to the second field.

**term** [COMMUN] Also known as synonym. **1.** Definition. **2.** Definition. [COMPUT SCI] Definition.

In the above arrangement, "Also known as . . ." applies only to both definitions in the first field.

**term** Also known as synonym. [COMMUN] **1.** Definition. **2.** Definition. [COMPUT SCI] Definition.

In the above arrangement, "Also known as . . ." applies to all definitions in both fields.

## Fields and Their Scope

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[COMMUN] **communications**—The science and technology by which information is collected from an originating source; converted into a form suitable for transmission; transmitted over a pathway such as a satellite channel, underwater acoustic channel, telephone cable, or fiber-optic link; and reconverted into a form suitable for interpretation by a receiver.

[COMPUT SCI] **computer science**—The study of computing, including computer hardware, software, programming, networking, database systems, information technology, interactive systems, and security.

[CONT SYS] **control systems**—The study of those systems in which one or more outputs are forced to change in a desired manner as time progresses.

[ELEC] **electricity**—The science of physical phenomena involving electric charges and their effects when at rest and when in motion.

[ELECTROMAG] **electromagnetism**—The branch of physics dealing with the observations and laws relating electricity to magnetism, and with magnetism produced by an electric current.

[ELECTR] **electronics**—The technological area involving the manipulation of voltages and electric currents through the use of various devices for the purpose of performing some useful action with the currents and voltages; this field is generally divided into analog electronics, in which the signals to be manipulated take the form of continuous currents or voltages, and digital electronics, in which signals are represented by a finite set of states.

[ENG] **engineering**—The science by which the properties of matter and the sources of power in nature are made useful to humans in structures, machines, and products.

[ENG ACOUS] **engineering acoustics**—The field of acoustics that deals with the production, detection, and control of sound by electrical devices, including the study, design, and construction of such things as microphones, loudspeakers, sound recorders and reproducers, and public address systems.

[GEOPHYS] **geophysics**—The branch of geology in which the principles and practices of physics are used to study the earth and its environment, that is, earth, air, and (by extension) space.

[MATER] **materials**—A multidisciplinary field concerned with the properties and uses of materials in terms of composition, structure, and processing.

[MATH] **mathematics**—The deductive study of shape, quantity, and dependence; the two main areas are applied mathematics and pure mathematics, the former arising from the study of physical phenomena, the latter involving the intrinsic study of mathematical structures.

[NAV] **navigation**—The science or art of directing the movement of a craft, such as a ship, small marine craft, underwater vehicle, land vehicle, aircraft, missile, or spacecraft, from one place to another with the assistance of onboard equipment, objects, or devices, or of systems external to the craft.

[OPTICS] **optics**—The study of phenomena associated with the generation, transmission, and detection of electromagnetic radiation in the spectral range extending from the long-wave edge of the x-ray region to the short-wave edge of the radio region; and the science of light.

[PHYS] **physics**—The science concerned with those aspects of nature which can be understood in terms of elementary principles and laws.

[SOLID STATE] **solid-state physics**—The branch of physics centering on the physical properties of solid materials; it is usually concerned with the properties of crystalline materials only, but it is sometimes extended to include the properties of glasses or polymers.

[STAT] **statistics**—The science dealing with the collection, analysis, interpretation, and presentation of masses of numerical data.

[SYS ENG] **systems engineering**—The branch of engineering dealing with the design of a complex interconnection of many elements (a system) to maximize an agreed-upon measure of system performance.

# Pronunciation Key

## Vowels

a	as in <b>bat</b> , <b>that</b>
ā	as in <b>bait</b> , <b>crate</b>
ä	as in <b>bother</b> , <b>father</b>
e	as in <b>bet</b> , <b>net</b>
ē	as in <b>beet</b> , <b>treat</b>
i	as in <b>bit</b> , <b>skit</b>
ī	as in <b>bite</b> , <b>light</b>
ō	as in <b>boat</b> , <b>note</b>
ó	as in <b>bought</b> , <b>taut</b>
ú	as in <b>book</b> , <b>pull</b>
ü	as in <b>boot</b> , <b>pool</b>
ə	as in <b>but</b> , <b>sofa</b>
au	as in <b>crowd</b> , <b>power</b>
oi	as in <b>boil</b> , <b>spoil</b>
yə	as in <b>formula</b> , <b>spectacular</b>
yü	as in <b>fuel</b> , <b>mule</b>

## Semivowels/Semiconsonants

w	as in <b>wind</b> , <b>twin</b>
y	as in <b>yet</b> , <b>onion</b>

## Stress (Accent)

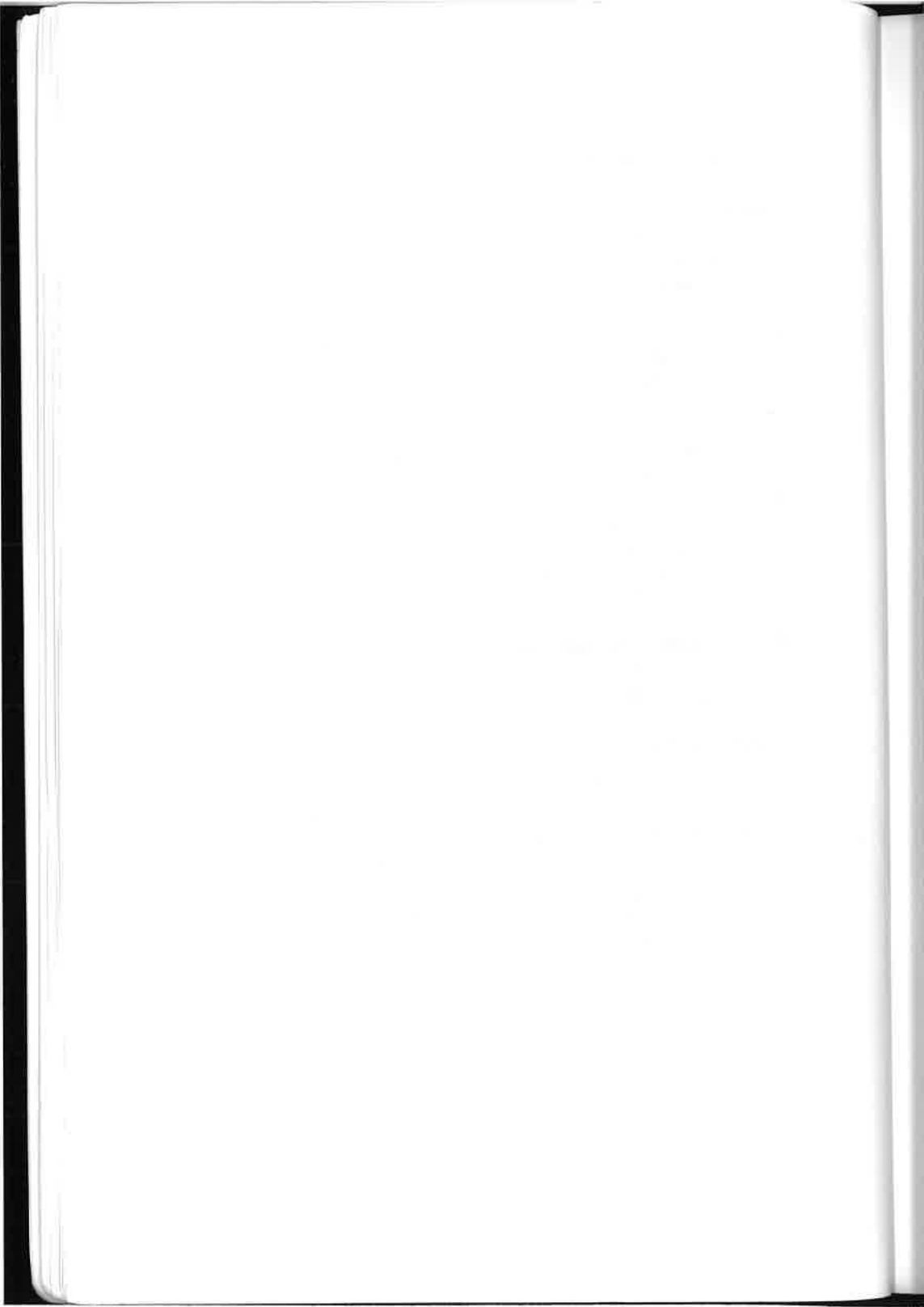
'	precedes syllable with primary stress
ˈ	precedes syllable with secondary stress
ˌ	precedes syllable with variable or indeterminate primary/secondary stress

## Consonants

b	as in <b>bib</b> , <b>dribble</b>
ch	as in <b>charge</b> , <b>stretch</b>
d	as in <b>dog</b> , <b>bad</b>
f	as in <b>fix</b> , <b>safe</b>
g	as in <b>good</b> , <b>signal</b>
h	as in <b>hand</b> , <b>behind</b>
j	as in <b>joint</b> , <b>digit</b>
k	as in <b>cast</b> , <b>brick</b>
ƙ	as in <b>Bach</b> (used rarely)
l	as in <b>loud</b> , <b>bell</b>
m	as in <b>mild</b> , <b>summer</b>
n	as in <b>new</b> , <b>dent</b>
<u>n</u>	indicates nasalization of preceding vowel
ŋ	as in <b>ring</b> , <b>single</b>
p	as in <b>pier</b> , <b>slip</b>
r	as in <b>red</b> , <b>scar</b>
s	as in <b>sign</b> , <b>post</b>
sh	as in <b>sugar</b> , <b>shoe</b>
t	as in <b>timid</b> , <b>cat</b>
th	as in <b>thin</b> , <b>breath</b>
<u>th</u>	as in <b>then</b> , <b>breathe</b>
v	as in <b>veil</b> , <b>weave</b>
z	as in <b>zoo</b> , <b>cruise</b>
zh	as in <b>beige</b> , <b>treasure</b>

## Syllabication

·	Indicates syllable boundary when following syllable is unstressed
---	---



# A

- a** See ampere.
- A** See ampere.
- aΩ** See abohm.
- (aΩ)<sup>-1</sup>** See abmho.
- A+** See A positive.
- aA** See abampere.
- aA/cm<sup>2</sup>** See abampere per square centimeter.
- A AND NOT B gate** See AND NOT gate. { 'ā an nōt 'bē ,gāt }
- abampere** [ELEC] The unit of electric current in the electromagnetic centimeter-gram-second system; 1 abampere equals 10 amperes in the absolute meter-kilogram-second-ampere system. Abbreviated aA. Also known as Bi; biot. { ab'am-pēr }
- abampere per square centimeter** [ELEC] The unit of current density in the electromagnetic centimeter-gram-second system. Abbreviated aA/cm<sup>2</sup>. { ab'am-pēr pār 'skwer 'sen-tə,mēd-ər }
- A battery** [ELECTR] The battery that supplies power for filaments or heaters of electron tubes in battery-operated equipment. { 'ā ,bat-ə-rē }
- abbreviated dialing** [COMMUN] A feature which requires less than the usual number of dialing operations to connect two or more subscribers. { ə'brē-vē-ād-əd 'dī-liŋ }
- ABC** See automatic brightness control.
- abcoulomb** [ELEC] The unit of electric charge in the electromagnetic centimeter-gram-second system, equal to 10 coulombs. Abbreviated aC. { ab'kü-lōm }
- abcoulomb centimeter** [ELEC] In the electromagnetic centimeter-gram-second system of units, the unit of electric dipole moment. Abbreviated aCcm. { ab'kü-lōm 'sen-tə,mēd-ər }
- abcoulomb per cubic centimeter** [ELEC] The electromagnetic centimeter-gram-second unit of volume density of charge. Abbreviated aC/cm<sup>3</sup>. { ab'kü-lōm pār 'kyū-bik 'sen-tə,mēd-ər }
- abcoulomb per square centimeter** [ELEC] The electromagnetic centimeter-gram-second unit of surface density of charge, electric polarization, and displacement. Abbreviated aC/cm<sup>2</sup>. { ab'kü-lōm pār skwer 'sen-tə,mēd-ər }
- abeam** See on the beam. { a'bēm }
- abend** [COMPUT SCI] An unplanned program termination that occurs when a computer is directed to execute an instruction or to process information that it cannot recognize. Also known as blow up; bomb; crash. { 'ab-end }
- abfarad** [ELEC] A unit of capacitance in the electromagnetic centimeter-gram-second system equal to 10<sup>9</sup> farads. Abbreviated aF. { ab'far-ad }
- abhenry** [ELEC] A unit of inductance in the electromagnetic centimeter-gram-second system of units which is equal to 10<sup>-9</sup> henry. Abbreviated aH. { ab'hen-rē }
- able** [COMPUT SCI] A name for the hexadecimal digit whose decimal equivalent is 10. { 'ā-bəl }
- abmho** [ELEC] A unit of conductance in the electromagnetic centimeter-gram-second system of units equal to 10<sup>9</sup> mhos. Abbreviated (aΩ)<sup>-1</sup>. Also known as absiemens (aS). { 'ab,mō }
- Abney level** See clinometer. { 'ab-nē 'lev-əl }
- abnormal glow discharge** [ELECTR] A discharge of electricity in a gas tube at currents somewhat higher than those of an ordinary glow discharge, at which point the glow covers the entire cathode and the voltage drop decreases with increasing current. { ab'nōr-məl ,glō 'dis-chärj }
- abnormal propagation** [COMMUN] Phenomena of unstable or changing atmospheric or ionospheric conditions acting upon transmitted radio waves, preventing such waves from following their normal path, thereby causing difficulties and disruptions of communications. { ab'nōr-məl ,prəp-ə'gā-shən }
- abnormal statement** [COMPUT SCI] An element of a FORTRAN V (UNIVAC) program which specifies that certain function subroutines must be called every time they are referred to. { ab'nōr-məl 'stāt-mənt }
- abohm** [ELEC] The unit of electrical resistance in the centimeter-gram-second system; 1 abohm equals 10<sup>-9</sup> ohm in the meter-kilogram-second system. Abbreviated aΩ. { a'bōm }
- abohm centimeter** [ELEC] The centimeter-gram-second unit of resistivity. Abbreviated aΩcm. { a'bōm 'sen-tə,mē-dər }
- abort** [COMPUT SCI] To terminate a procedure, such as the running of a computer program or the printing of a document, while it is still in progress. { ə'bɔrt }
- abort branch** [CONT SYS] A branching instruction in the program controlling a robot that causes a test to be performed on whether the tool-center point is properly positioned, and to reposition it if it drifts out of the acceptable range. { ə'bɔrt ,brəntʃ }

## AB power pack

**AB power pack** [ELEC] 1. Assembly in a single unit of the A battery and B battery for a battery-operated vacuum-tube circuit. 2. Unit that supplies the necessary A and B direct-current voltages from an alternating-current source of power. { 'ā|bē 'pau-ər ,pak }

**abrupt junction** [ELECTR] A  $p-n$  junction in which the concentration of impurities changes suddenly from acceptors to donors. { ə'brəpt 'ʃʌŋk-shən }

**abs** [COMPUT SCI] A special function occurring in ALGOL, which yields the absolute value, or modulus, of its argument.

**abslemens** See abmho. { ab'sē-mənz }

**absolute address** [COMPUT SCI] The numerical identification of each storage location which is wired permanently into a computer by the manufacturer. { 'ab-sə,lüt ə'dres }

**absolute addressing** [COMPUT SCI] The identification of storage locations in a computer program by their physical addresses. { 'ab-sə,lüt ə'dres-ɪŋ }

**absolute category rating mean opinion score** [COMMUN] Methodology for subjectively testing audio quality where participants are presented with sound samples, one at a time, and are asked to grade them on a 5-point scale. For the NRSC FM IBOC tests, the MOS scale used was 5 = excellent, 4 = good, 3 = fair, 2 = poor, 1 = bad. Abbreviated ACR-MOS. { |əb-sə,lüt kəd-ə,gōr-ē rād-ɪŋ mēn 'ə-'pɪn-ʃən ,skōr }

**absolute cell reference** [COMPUT SCI] A cell reference used in a formula in a spreadsheet program that does not change when the formula is copied or moved. { |əb-sə,lüt 'sel ,ref-rəns }

**absolute code** [COMPUT SCI] A code used when the addresses in a program are to be written in machine language exactly as they will appear when the instructions are executed by the control circuits. { 'ab-sə,lüt 'kōd }

**absolute efficiency** [ENG ACOUS] The ratio of the power output of an electroacoustic transducer, under specified conditions, to the power output of an ideal electroacoustic transducer. { 'ab-sə,lüt ə'fɪʃ-ən-sē }

**absolute electrometer** [ELEC] A very precise type of attracted disk electrometer in which the attraction between two disks is balanced against the force of gravity. { 'ab-sə,lüt ə,lek'trām-əd-ər }

**absolute gain of an antenna** [ELECTROMAG] Gain in a given direction when the reference antenna is an isotropic antenna isolated in space. Also known as isotropic gain of an antenna. { 'ab-sə,lüt ,gān əv ən an'ten-ə }

**absolute index of refraction** See index of refraction. { 'ab-sə,lüt 'ɪn,deks əv rɪ'frak-shən }

**absolute instruction** [COMPUT SCI] A computer instruction in its final form, in which it can be executed. { 'ab-sə,lüt ɪn'strək-shən }

**absolute programming** [COMPUT SCI] Programming with the use of absolute code. { 'ab-sə,lüt 'prō-gram-ɪŋ }

**absolute refractive constant** See index of refraction. { 'ab-sə,lüt rɪ'frak-tɪv 'kən-stənt }

**absolute-value computer** [COMPUT SCI] A computer that processes the values of the variables rather than their increments. { 'ab-sə,lüt 'val-yü kəm'pyü-ər }

**absolute vector** [COMPUT SCI] In computer graphics, a vector whose end points are given in absolute coordinates. { 'ab-sə,lüt 'vek-tər }

**absorbed charge** [ELEC] Charge on a capacitor which arises only gradually when the potential difference across the capacitor is maintained, due to gradual orientation of permanent dipolar molecules. { əb'sɔrbd 'tʃɑrʒ }

**absorber** [ELECTR] A material or device that takes up and dissipates radiated energy; may be used to shield an object from the energy, prevent reflection of the energy, determine the nature of the radiation, or selectively transmit one or more components of the radiation. { əb'sɔr-bər }

**absorber control** See absorption control. { əb'sɔr-bər kən'trɔl }

**absorption** [ELEC] The property of a dielectric in a capacitor which causes a small charging current to flow after the plates have been brought up to the final potential, and a small discharging current to flow after the plates have been short-circuited, allowed to stand for a few minutes, and short-circuited again. Also known as dielectric soak. [ELECTROMAG] Taking up of energy from radiation by the medium through which the radiation is passing. { əb'sɔrp-shən }

**absorption circuit** [ELECTR] A series-resonant circuit used to absorb power at an unwanted signal frequency by providing a low impedance to ground at this frequency. { əb'sɔrp-shən 'sər-kət }

**absorption control** See absorption modulation. { əb'sɔrp-shən kən'trɔl }

**absorption current** [ELEC] The component of a dielectric current that is proportional to the rate of accumulation of electric charges within the dielectric. { əb'sɔrp-shən 'kər-ənt }

**absorption fading** [COMMUN] Slow type of fading, primarily caused by variations in the absorption rate along the radio path. { əb'sɔrp-shən 'fād-ɪŋ }

**absorption loss** [COMMUN] That part of the transmission loss due to the dissipation or conversion of either sound energy or electromagnetic energy into other forms of energy, either within the medium or attendant upon a reflection. { əb'sɔrp-shən ,lɔs }

**absorption meter** [ENG] An instrument designed to measure the amount of light transmitted through a transparent substance, using a photocell or other light detector. { əb'sɔrp-shən 'mēd-ər }

**absorption modulation** [ELECTR] A system of amplitude modulation in which a variable-impedance device is inserted in or coupled to the output circuit of the transmitter. Also known as absorption control; loss modulation. { əb'sɔrp-shən mād-yū'lā-shən }

**absorption wavemeter** [ELECTR] A frequency- or wavelength-measuring instrument consisting of



a calibrated tunable circuit and a resonance indicator. {əb'sɔrɪp-shən 'wāv,mēd-ər}

**abstract automata theory** [COMPUT SCI] The mathematical theory which characterizes automata by three sets: input signals, internal states, and output signals; and two functions: input functions and output functions. {'abz-trakt ə'təm-ə-tə 'thē-ə-rē}

**abstract data type** [COMPUT SCI] A mathematical model which may be used to capture the essentials of a problem domain in order to translate it into a computer program; examples include queues, lists, stacks, trees, graphs, and sets. Abbreviated ADT. {'abz-trakt 'dad-ə ,tɪp}

**abvolt** [ELEC] The unit of electromotive force in the electromagnetic centimeter-gram-second system; 1 abvolt equals  $10^{-8}$  volt in the absolute meter-kilogram-second system. Abbreviated aV. {'ab,vɔlt}

**abvolt per centimeter** [ELEC] In the electromagnetic centimeter-gram-second system of units, the unit of electric field strength. Abbreviated aV/cm. {'ab,vɔlt pər 'sen-tə,mēd-ər}

**abwatt** [ELEC] The unit of electrical power in the centimeter-gram-second system; 1 abwatt equals 1 watt in the absolute meter-kilogram-second system. {'ab,wät}

**ac** See alternating current.

**aC** See abcoulomb.

**ACAS** See airborne collision avoidance system.

**accelerated graphics port** [COMPUT SCI] A personal computer graphics bus that transfers data at a greater rate than a PCI bus. {ək,sel-ə,rād-əd 'graf-iks ,pɔrt}

**accelerated test** [ELEC] A test of the serviceability of an electric cable in use for some time by applying twice the voltage normally carried. {ək'sel-ər,ā-dəd 'test}

**accelerating electrode** [ELECTR] An electrode used in cathode-ray tubes and other electron tubes to increase the velocity of the electrons that contribute the space current or form a beam. {ək'sel-ər,ād-ɪŋ 'i'lek,trəd}

**accelerating potential** [ELECTR] The energy potential in electron-beam equipment that imparts additional speed and energy to the electrons. {ək'sel-ər,ād-ɪŋ pə'ten-shəl}

**accelerating relay** [ELEC] Any relay that is used to assist in starting a motor or increasing its speed. {ək'sel-ər,rād-ɪŋ 'rē,lā}

**acceleration-error constant** [CONT SYS] The ratio of the acceleration of a controlled variable of a servomechanism to the actuating error when the actuating error is constant. {ək,sel-ə'rā-shən 'er-ər 'kän-stənt}

**acceleration switch** [ELEC] A switch that opens or closes in the presence of acceleration that exceeds a certain value. {ək,sel-ə'rā-shən ,swɪtʃ}

**acceleration time** [COMPUT SCI] The time required for a magnetic tape transport or any other mechanical device to attain its operating speed. {ək,sel-ə'rā-shən ,tɪm}

**acceleration tolerance** [ENG] The degree to which personnel or equipment withstands acceleration. {ək,sel-ə'rā-shən 'tāl-ər-əns}

**acceleration voltage** [ELECTR] The voltage between a cathode and accelerating electrode of an electron tube. {ək,sel-ə'rā-shən 'vɔl-təʃ}

**accentuation** [ELECTR] The enhancement of signal amplitudes in selected frequency bands with respect to other signals. {ək,sen-chə'wā-shən}

**accentuator** [ELECTR] A circuit that provides for the first part of a process for increasing the strength of certain audio frequencies with respect to others, to help these frequencies override noise or to reduce distortion. Also known as accentuator circuit. {ək'sen-chə,wād-ər}

**accentuator circuit** See accentuator. {ək'sen-chə,wād-ər 'sər-kət}

**accept** [COMPUT SCI] A data transmission statement which is used in FORTRAN when the computer is in conversational mode, and which enables the programmer to input, through the teletypewriter, data the programmer wishes stored in memory. {ək'sept}

**acceptor** [SOLID STATE] An impurity element that increase the number of holes in a semiconductor crystal such as germanium or silicon; aluminum, gallium, and indium are examples. Also known as acceptor impurity; acceptor material. {ək'sep-tər}

**acceptor circuit** [ELECTR] A series-resonant circuit that has a low impedance at the frequency to which it is tuned and a higher impedance at all other frequencies. {ək'sep-tər 'sər-kət}

**acceptor impurity** See acceptor. {ək'sep-tər ɪm 'pyūr-ə-dē}

**acceptor material** See acceptor. {ək'sep-tər mə 'tɪr-ē-əl}

**access** [COMPUT SCI] The reading of data from storage or the writing of data into storage. {'ək ,ses}

**access arm** [COMPUT SCI] The mechanical device which positions the read/write head on a magnetic storage unit. {'ək,ses ,ärm}

**access code** [COMMUN] 1. Numeric identification for internetwork or facility switching. 2. The preliminary digits that a user must dial to be connected through an automatic PBX to the serving switching center. [COMPUT SCI] A sequence of characters which a user must enter into a terminal in order to use a computer system. {'ək,ses ,kɔd}

**access control** [COMPUT SCI] A restriction on the operations that a user of a computer system may perform on files and other resources of the system. {'ək,ses kən'trɔl}

**access-control list** [COMPUT SCI] A column of an access matrix, containing the access rights of various users of a computer system to a given file or other resource of the system. {'ək,ses kən'trɔl ,lɪst}

**access-control mechanism** See reference monitor. {'ək,ses kən'trɔl ;me-kə-ni-zəm}

**access-control register** [COMPUT SCI] A storage device which controls the word-by-word transmission over a given channel. {'ək,ses kən'trɔl ,rej-ə-stɔr}

## access-control words

- access-control words** [COMPUT SCI] Permanently wired instructions channeling transmitted words into reserved locations. { 'ak,ses kən'trɒl ,wɜ:dz }
- access gap** See memory gap. { 'ak,ses ,gæp }
- access line** [COMMUN] Four-wire circuit between a subscriber or a local PBX to the serving switching center. { 'ak,ses ,lɪn }
- access management** [COMPUT SCI] The use of techniques to allow various components of a computer's operating system to be used only by authorized personnel. { 'ak,ses ,mæn-ij-mənt }
- access matrix** [COMPUT SCI] A method of representing discretionary authorization information, with rows representing subjects or users of the system, columns corresponding to objects or resources of the system, and cells (intersections of rows and columns) composed of allowable operations that a subject may apply to an object. { 'ak,ses ,mā-trɪks }
- access mechanism** [COMPUT SCI] The mechanism of positioning reading or writing heads onto the required tracks of a magnetic disk. { 'ak,ses 'mek-ə,nɪz-əm }
- access method** [COMMUN] The procedures required to obtain access to a communications network. [COMPUT SCI] A set of programming routines which links programs and the data that these programs transfer into and out of memory. { 'ak,ses ,meth-əd }
- access mode** [COMPUT SCI] A programming clause in COBOL which is required when using a random-access device so that a specific record may be read out of or written into a mass storage bin. { 'ak,ses ,mɒd }
- access privileges** [COMPUT SCI] The extent to which a user of a computer in a network is allowed to use and read, write to, and execute files in other computers in the network. { 'ak ,ses ,prɪv-ə-ləj-əs }
- access protocol** [COMMUN] A set of rules observed by all nodes in a local-area network so that one node can get the attention of another and its data packet can be transferred, and so that no two data packets can be simultaneously transmitted over the same medium. { 'ak,ses ,prɒd-ə,kɒl }
- access provider** See service provider. { 'ak,ses ,prə,vɪd-ər }
- access time** [COMPUT SCI] The time period required for reading out of or writing into the computer memory. { 'ak,ses ,tɪm }
- access type** [COMPUT SCI] One of the allowable operations that a given user of a computer system governed by access controls may perform on a file or other resource of the system, such as own, read, write, or execute. { 'ak,ses ,tɪp }
- aCcm** See abcoulomb centimeter.
- aC/cm<sup>2</sup>** See abcoulomb per square centimeter.
- aC/cm<sup>3</sup>** See abcoulomb per cubic centimeter.
- accommodation** [CONT SYS] Any alteration in a robot's motion in response to the robot's environment; it may be active or passive. { ə,kəm-ə'dā-shən }
- accommodation time** [ELECTR] The time from the production of the first electron to the production of a steady electric discharge in a gas. { ə,kəm-ə'dā-shən ,tɪm }
- accordion cable** [ELEC] A flat, multiconductor cable prefolded into a zigzag shape and used to make connections to movable equipment such as a chassis mounted on pullout slides. { ə'kɔ:rd-ḡ-ən 'kæ-bl }
- accounting package** [COMPUT SCI] A set of special routines that allow collection of information about the usage level of various components of a computer system by each production program. { ə'kaunt-ɪŋ 'pæk-ɪj }
- accumulator** [COMPUT SCI] A specific register, in the arithmetic unit of a computer, in which the result of an arithmetic or logical operation is formed; here numbers are added or subtracted, and certain operations such as sensing, shifting, and complementing are performed. Also known as accumulator register; counter. [ELEC] See storage battery. { ə'kyü-myə,läd-ər }
- accumulator battery** See storage battery. { ə'kyü-myə,läd-ər 'bæd-ə-rē }
- accumulator jump instruction** [COMPUT SCI] An instruction which programs a computer to ignore the previously established program sequence depending on the status of the accumulator. Also known as accumulator transfer instruction. { ə'kyü-myə,läd-ər ,jʌmp ɪn'stræk-shən }
- accumulator register** See accumulator. { ə'kyü-myə,läd-ər 'rej-ə-stər }
- accumulator shift instruction** [COMPUT SCI] A computer instruction which causes the word in a register to be displaced a specified number of bit positions to the left or right. { ə'kyü-myə,läd-ər 'shift ɪn'stræk-shən }
- accumulator transfer instruction** See accumulator jump instruction. { ə'kyü-myə,läd-ər 'trans-fer ɪn'stræk-shən }
- accuracy control system** [COMPUT SCI] Any method which attempts error detection and control, such as random sampling and squaring. { 'ak-yə-rə-sē kən'trɒl ,sɪs-təm }
- ac/dc motor** See universal motor. { ,ä-sē,dē-sē 'mɒd-ər }
- ac/dc receiver** [ELECTR] A radio receiver designed to operate from either an alternating- or direct-current power line. Also known as universal receiver. { ,ä-sē,dē-sē rɪ'sēv-ər }
- ACK** See acknowledge character.
- acknowledge character** [COMPUT SCI] A signal that a receiving station transmits in order to indicate that a block of information has been received and that its validity has been checked. Also known as acknowledgement. Abbreviated ACK. { 'ak'nä-lɪj 'kær-ək-tər }
- acknowledgement** See acknowledge character. { 'ak'nä-lɪj-mənt }
- aΩcm** See abohm centimeter.
- acorn tube** [ELECTR] An ultra-high-frequency electron tube resembling an acorn in shape and size. { 'ä,kɔ:rn ,tüb }
- acoustic amplifier** [ELECTR] A device that amplifies mechanical vibrations directly at audio and

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ultrasonic frequencies. Also known as acoustoelectric amplifier. { ə'kūs-tik 'am-plə,fi-ər }

**acoustic array** [ENG ACOUS] A sound-transmitting or sound-receiving system whose elements are arranged to give desired directional characteristics. { ə'kūs-tik ə'rā }

**acoustic bridge** [ELECTR] A device, based on the principle of the electrical Wheatstone bridge, used for analysis of deafness. { ə'kūs-tik 'bri:dʒ }

**acoustic center** [ENG ACOUS] The center of the spherical sound waves radiating outward from an acoustic transducer. { ə'kūs-tik 'sen-tər }

**acoustic clarifier** [ENG ACOUS] System of cones loosely attached to the baffle of a loudspeaker and designed to vibrate and absorb energy during sudden loud sounds to suppress these sounds. { ə'kūs-tik 'klar-ə,fi-ər }

**acoustic convolver** See convolver. { ə'kūs-tik kən 'vɔlv-ər }

**acoustic coupler** [ENG ACOUS] A device used between the modem of a computer terminal and a standard telephone line to permit transmission of digital data in either direction without making direct connections. { ə'kūs-tik 'kɒp-lər }

**acoustic delay** [ENG ACOUS] A delay which is deliberately introduced in sound reproduction by having the sound travel a certain distance along a pipe before conversion into electric signals. { ə'kūs-tik di'lā }

**acoustic delay line** [ELECTR] A device in which acoustic signals are propagated in a medium to make use of the sonic propagation time to obtain a time delay for the signals. Also known as sonic delay line. { ə'kūs-tik di'lā ,li:n }

**acoustic detector** [ELECTR] The stage in a receiver at which demodulation of a modulated radio wave into its audio component takes place. { ə'kūs-tik di'tek-tər }

**acoustic feedback** [ENG ACOUS] The reverberation of sound waves from a loudspeaker to a preceding part of an audio system, such as to the microphone, in such a manner as to reinforce, and distort, the original input. Also known as acoustic regeneration. { ə'kūs-tik 'fēd ,bæk }

**acoustic filter** See filter. { ə'kūs-tik 'fil-tər }

**acoustic generator** [ENG ACOUS] A transducer which converts electrical, mechanical, or other forms of energy into sound. { ə'kūs-tik 'jen-ə ,rād-ər }

**acoustic hologram** [ENG] The phase interference pattern, formed by acoustic beams, that is used in acoustical holography; when light is made to interact with this pattern, it forms an image of an object placed in one of the beams. { ə'kūs-tik 'hɔl-ə,gram }

**acoustic horn** See horn. { ə'kūs-tik 'hɔrn }

**acoustic jamming** [ENG ACOUS] The deliberate radiation or reradiation of mechanical or electroacoustic signals with the objectives of obliterating or obscuring signals which the enemy is attempting to receive and of deterring enemy weapons systems. { ə'kūs-tik 'jam-ɪŋ }

**acoustic labyrinth** [ENG ACOUS] Special baffle arrangement used with a loudspeaker to prevent

cavity resonance and to reinforce bass response. { ə'kūs-tik 'lab-ə,rɪnθ }

**acoustic line** [ENG ACOUS] The acoustic equivalent of an electrical transmission line, involving baffles, labyrinths, or resonators placed at the rear of a loudspeaker and arranged to help reproduce the very low audio frequencies. { ə'kūs-tik 'li:n }

**acoustic radiator** [ENG ACOUS] A vibrating surface that produces sound waves, such as a loudspeaker cone or a headphone diaphragm. { ə'kūs-tik 'rād-ē,ād-ər }

**acoustic radiometer** [ENG] An instrument for measuring sound intensity by determining the unidirectional steady-state pressure caused by the reflection or absorption of a sound wave at a boundary. { ə'kūs-tik ,rād-ə'ä-məd-ər }

**acoustic ratio** [ENG ACOUS] The ratio of the intensity of sound radiated directly from a source to the intensity of sound reverberating from the walls of an enclosure, at a given point in the enclosure. { ə'kūs-tik 'rā-shō }

**acoustic receiver** [ELECTR] The complete equipment required for receiving modulated radio waves and converting them into sound. { ə'kūs-tik rə'sēv-ər }

**acoustic reflex enclosure** [ENG ACOUS] A loudspeaker cabinet designed with a port to allow a low-frequency contribution from the rear of the speaker cone to be radiated forward. { ə'kūs-tik 'rē,fleks in ,klɔ-zhər }

**acoustic regeneration** See acoustic feedback. { ə'kūs-tik rē,ʒen-ə'rā-shən }

**acoustic seal** [ENG ACOUS] A joint between two parts to provide acoustical coupling with low losses of energy, such as between an earphone and the human ear. { ə'kūs-tik 'sēl }

**acoustic spectrometer** [ENG ACOUS] An instrument that measures the intensities of the various frequency components of a complex sound wave. Also known as audio spectrometer. { ə'kūs-tik spek'trəm-əd-ər }

**acoustic transducer** [ENG ACOUS] A device that converts acoustic energy to electrical or mechanical energy, such as a microphone or phonograph pickup. { ə'kūs-tik tranz'dü-sər }

**acoustic transformer** [ENG ACOUS] A device, such as a horn or megaphone, for increasing the efficiency of sound radiation. { ə'kūs-tik tranz 'fɔr-mər }

**acoustic-wave amplifier** [ELECTR] An amplifier in which the charge carriers in a semiconductor are coupled to an acoustic wave that is propagated in a piezoelectric material, to produce amplification. { ə'kūs-tik wāv 'am-plə,fi-ər }

**acoustoelectric amplifier** See acoustic amplifier. { ə'kūs-tō-əlek-trik 'am-plə,fi-ər }

**acoustoelectric effect** [ELECTR] 1. The development of a direct-current voltage in a semiconductor or metal by an acoustic wave traveling parallel to the surface of the material. Also known as electroacoustic effect. 2. The amplification of a sound wave propagating in a piezoelectric semiconductor subject to a steady electric field that is strong enough that the resulting electron

## acoustoelectronics

- drift velocity exceeds the speed of sound. {ə,kūs-tō-ə'lek-trik i,fekt }
- acoustoelectronics** [ENG ACOUS] The branch of electronics that involves use of acoustic waves at microwave frequencies (above 500 megahertz), traveling on or in piezoelectric or other solid substrates. Also known as preterasonics. {ə,kūs-tō-ə'lek'trān-iks }
- acoustooptical cell** [ELEC] An electric-to-optical transducer in which an acoustic or ultrasonic electric input signal modulates or otherwise acts on a beam of light. {ə'kūs-tō'āp-tə-kəl 'sel }
- acoustooptic interaction** [OPTICS] A way to influence the propagation characteristics of an optical wave by applying a low-frequency acoustical field to the medium through which the wave passes. {ə'kūs-tō'āp-tik ,in-tə'rak-shən }
- acoustooptic modulator** [OPTICS] A device utilizing acoustooptic interaction ultrasonically to vary the amplitude or the phase of a light beam. Also known as Bragg cell. {ə'kūs-tō'āp-tik 'mäd-yə,lād-ər }
- acoustooptics** [OPTICS] The science that deals with interactions between acoustic waves and light. {ə'kūs-tō'āp-tiks }
- acquire** [ELECTR] 1. Of acquisition radars, the process of detecting the presence and location of a target in sufficient detail to permit identification. 2. Of tracking radars, the process of positioning a radar beam so that a target is in that beam to permit the effective employment of weapons. Also known as target acquisition. {ə'kwīr }
- acquisition** [ELECTR] Also known as target acquisition. 1. Of acquisition radars, the process of detecting and locating a target so as to permit reliable tracking and possible identification of it or other determinations about it. 2. Of precision tracking radars, the detecting and tracking of a target designated to it by another radar or other initial data source to support continued intended action. [ENG] The process of pointing an antenna or a telescope so that it is properly oriented to allow gathering of tracking and telemetry data from a satellite or space probe. {ə'kwīz-ən }
- acquisition and tracking radar** [ENG] A radar set capable of locking onto a received signal and tracking the object emitting the signal; the radar may be airborne or on the ground. {ə'kwīz-ən ən 'trak-ŋ ,rā,dār }
- acquisition tone** [COMPUT SCI] An audible tone that verifies entry into a computer. {ə'kwīz-ən ,tōn }
- ACR-MOS** See absolute category rating mean opinion score.
- ACSR** See aluminum cable steel-reinforced.
- actinodielectric** [ELEC] Of a substance, exhibiting an increase in electrical conductivity when electromagnetic radiation is incident upon it. {ə'k-tə-nō,dī-ə'lek-trik }
- actinodielectricity** [ELEC] The electromotive force produced in a substance by electromag-
- netic radiation incident upon it. {ə'k-tə-nō-i ,lek'tris-ə-dē }
- action entries** [COMPUT SCI] The lower right-hand portion of a decision table, indicating which of the various possible actions result from each of the various possible conditions. {ə'k-shən ,en-trēz }
- action period** [ELECTR] The period of time during which data in a Williams tube storage device can be read or new data can be written into this storage. {ə'k-shən ,pīr-ē-əd }
- action portion** [COMPUT SCI] The lower portion of a decision table, comprising the action stub and action entries. {ə'k-shən ,pōr-shən }
- action stub** [COMPUT SCI] The lower left-hand portion of a decision table, consisting of a single column listing the various possible actions (transformations to be done on data and materials). {ə'k-shən ,stəb }
- activate** [ELEC] To make a cell or battery operative by addition of a liquid. [ELECTR] To treat the filament, cathode, or target of a vacuum tube to increase electron emission. {ə'k-tə,vāt }
- activated cathode** [ELECTR] A thermionic cathode consisting of a tungsten filament to which thorium has been added, and then brought to the surface, by a process such as heating in the absence of an electric field in order to increase thermionic emission. {ə'k-tə,vād-əd 'kath,ōd }
- activation** [ELEC] The process of adding liquid to a manufactured cell or battery to make it operative. [ELECTR] The process of treating the cathode or target of an electron tube to increase its emission. Also known as sensitization. {ə'k-tə'vā-shən }
- activation record** [COMPUT SCI] A variable part of a program module, such as data and control information, that may vary with different instances of execution. {ə'k-tə'vā-shən 'rek-ərd }
- active accommodation** [CONT SYS] The alteration of preprogrammed robotic motions by the integrated effects of sensors, controllers, and the robotic motion itself. {ə'k-tiv ə,kām-ə'dā-shən }
- active area** [ELECTR] The area of a metallic rectifier that acts as the rectifying junction and conducts current in the forward direction. {ə'k-tiv 'er-ē-ə }
- active array** [ELECTROMAG] A radar antenna composed of many radiating elements, each of which contains an amplifier, generally solid state in nature, for the final amplification of the signal transmitted; when the elements are also phased controlled for electronic beam steering, the term active phased array is used. {ə'k-tiv ə'rā }
- active balance** [COMMUN] Summation of all return currents, in telephone repeater operation, at a terminal network balanced against the impedance of the local circuit or drop. {ə'k-tiv 'bal-əns }

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**active cell** [COMPUT SCI] The cell that continues the value being used or modified in a spreadsheet program, and that is highlighted by the cell pointer. Also known as current cell. { 'ak-tiv 'sel }

**active communications satellite** [ENG] Satellite which receives, regenerates, and retransmits signals between stations. { 'ak-tiv kə ,myū-nə'kə-shənz 'səd-ə,lit }

**active component** [ELEC] In the phasor representation of quantities in an alternating-current circuit, the component of current, voltage, or apparent power which contributes power, namely, the active current, active voltage, or active power. Also known as power component. [ELECTR] See active element. { 'ak-tiv kəm'pō-nənt }

**active computer** [COMPUT SCI] When two or more computers are installed, the one that is on-line and processing data. { 'ak-tiv kəm'pyüd-ər }

**active current** [ELEC] The component of an electric current in a branch of an alternating-current circuit that is in phase with the voltage. Also known as watt current. { 'ak-tiv 'kə-rənt }

**active detection system** [ENG] A guidance system which emits energy as a means of detection; for example, sonar and radar. { 'ak-tiv di'tek-shən ,sis-təm }

**active device** [ELECTR] A component, such as an electron tube or transistor, that is capable of amplifying the current or voltage in a circuit. { 'ak-tiv di'vīs }

**active electric network** [ELEC] Electric network containing one or more sources of energy. { 'ak-tiv ə'lek-trik 'net,wərk }

**active electronic countermeasures** [ELECTR] The major subdivision of electronic countermeasures that concerns electronic jamming and electronic deceptions. { 'ak-tiv ə'lek'trən-ik 'kaünt-ər,mez-ərz }

**active element** [ELECTR] Any generator of voltage or current in an impedance network. Also known as active component. { 'ak-tiv 'el-ə-mənt }

**active file** [COMPUT SCI] A collection of records that is currently being used or is available for use. { 'ak-tiv 'fil }

**active filter** [ELECTR] A filter that uses an amplifier with conventional passive filter elements to provide a desired fixed or tunable pass or rejection characteristic. { 'ak-tiv 'fil-tər }

**active jamming** See jamming. { 'ak-tiv 'jam-ig }

**active leg** [ELECTR] An electrical element within a transducer which changes its electrical characteristics as a function of the application of a stimulus. { 'ak-tiv 'leg }

**active logic** [ELECTR] Logic that incorporates active components which provide such functions as level restoration, pulse shaping, pulse inversion, and power gain. { 'ak-tiv 'lāj-ik }

**active master file** [COMPUT SCI] A relatively active computer master file, as determined by usage data. { 'ak-tiv 'mas-tər 'fil }

**active master item** [COMPUT SCI] A relatively active item in a computer master file, as determined by usage data. { 'ak-tiv 'mas-tər 'i-təm }

**active material** [ELEC] **1.** A fluorescent material used in screens for cathode-ray tubes. **2.** An energy-storing material, such as lead oxide, used in the plates of a storage battery. **3.** A material, such as the iron of a core or the copper of a winding, that is involved in energy conversion in a circuit. **4.** In a battery, the chemically reactive material in either of the electrodes that participates in the charge and discharge reactions. [ELECTR] The material of the cathode of an electron tube that emits electrons when heated. { 'ak-tiv mə'tir-ē-əl }

**active-matrix liquid-crystal display** [ELEC] A liquid-crystal display that has an active element, such as a transistor or diode, on every picture element. Abbreviated AMLCD. { 'ak-tiv 'mā-triks 'lik-wid 'kris-təl di,sp'lā }

**active power** [ELEC] The product of the voltage across a branch of an alternating-current circuit and the component of the electric current that is in phase with the voltage. { 'ak-tiv 'paü-ər }

**active-RC filter** [ELEC] An active filter whose frequency-sensitive mechanism is the charging of a capacitor (C) through a resistor (R), giving a characteristic frequency at which the impedances of the resistor and the capacitor are equal. { 'ak-tiv 'järsē 'fil-tər }

**active region** [ELECTR] The region in which amplifying, rectifying, light emitting, or other dynamic action occurs in a semiconductor device. { 'ak-tiv 'rē-jən }

**active-RLC filter** [ELEC] An integrated-circuit filter that uses both inductors (L), made as spirals of metallization on the top layer, and amplifiers, connected to simulate negative resistors (R), that enhance the performance of the inductors as well as capacitors (C). { 'ak-tiv 'järlē'sē 'fil-tər }

**active satellite** [ENG] A satellite which transmits a signal. { 'ak-tiv 'səd-ə,lit }

**active sonar** [ENG] A system consisting of one or more transducers to send and receive sound, equipment for the generation and detection of the electrical impulses to and from the transducer, and a display or recorder system for the observation of the received signals. { 'ak-tiv 'sō,när }

**active system** [ENG] In radio and radar, a system that requires transmitting equipment, such as a beacon or transponder. { 'ak-tiv 'sis-təm }

## active termination

**active termination** [COMPUT SCI] A means of ending a chain of peripheral devices connected to a small computer system interface (SCSI) port, suitable for longer chains, where it can reduce electrical interference. { 'ak-tiv ,tər-mə'nā-shən }

**active transducer** [ELECTR] A transducer whose output is dependent upon sources of power, apart from that supplied by any of the actuating signals, which power is controlled by one or more of these signals. { 'ak-tiv tranz'dūs-ər }

**active voltage** [ELEC] In an alternating-current circuit, the component of voltage which is in phase with the current. { 'ak-tiv 'vōl-tij }

**active window** [COMPUT SCI] In a windowing environment, the window in which the user is currently working and which receives keyboard input. { 'ak-tiv 'win,dō }

**activity** [COMPUT SCI] The use or modification of information contained in a file. { ,ak'tiv-əd-ē }

**activity level** [COMPUT SCI] 1. The value assumed by a structural variable during the solution of a programming problem. 2. A measure of the number of times that use or modification is made of the information contained in a file. { ,ak'tiv-əd-ē 'lev-əl }

**activity ratio** [COMPUT SCI] The ratio between used or modified records and the total number of records in a file. { ,ak'tiv-əd-ē ,rā-shō }

**activity sequence method** [COMPUT SCI] A method of organizing records in a file so that the records most frequently used are located where they can be found most quickly. { ak'tiv-əd-ē 'sē-kwəns ,meth-əd }

**actual argument** [COMPUT SCI] The variable which replaces a dummy argument when a procedure or macroinstruction is called up. { 'ak-chə-wəl 'är-gyə-mənt }

**actual decimal point** [COMPUT SCI] The period appearing on a printed report as opposed to the virtual point defined only by the data structure within the computer. { 'ak-chə-wəl 'des-məl 'pōint }

**actual instruction** See effective instruction. { 'ak-chə-wəl in'strək-shən }

**actual key** [COMPUT SCI] A data item in COBOL computer language which can be used as an address. { 'ak-chə-wəl 'kē }

**actuating system** [CONT SYS] An electric, hydraulic, or other system that supplies and transmits energy for the operation of other mechanisms or systems. { 'ak-chə,wäd-ıŋ ,sis-təm }

**actuator** [CONT SYS] A mechanism to activate process control equipment by use of pneumatic, hydraulic, or electronic signals. [ENG ACOUS] An auxiliary external electrode used to apply a known electrostatic force to the diaphragm of a microphone for calibration purposes. Also known as electrostatic actuator. { 'ak-chə,wäd-ər }

**acyclic feeding** [COMPUT SCI] A method employed by alphanumeric readers in which the trailing edge or some other document characteristic is used to activate the feeding of the succeeding document. { ä'sik-lik 'fēd-ıŋ }

**acyclic machine** See homopolar generator. { ä'sik-lik mə'shēn }

**Ada** [COMPUT SCI] A computer language that was chosen by the United States Department of Defense to support the development of embedded systems, and uses the language Pascal as a base to meet the reliability and efficiency requirements imposed by these systems. { 'ä-də }

**adapter** [COMPUT SCI] A device which converts bits of information received serially into parallel bit form for use in the inquiry buffer unit. [ENG] A device used to make electrical or mechanical connections between items not originally intended for use together. { ə'dap-tər }

**adapter transformer** [ELEC] A transformer designed to supply a single electric lamp; its primary terminals are designed to fit into an ordinary lampholder, its secondary terminals into a lampholder of a low-voltage lamp. { ə'dap-tər tranz,för-mər }

**adaptive antenna** [ELECTROMAG] An antenna that adjusts its pattern automatically to be the inverse to any nonuniform distribution in angle of offending interference sources, tending to "whiten" or make appear uniform the noise in angle and minimizing the effects of strong jamming. { ə'dap-tiv an'ten-ə }

**adaptive branch** [CONT SYS] A branch instruction in the computer program controlling a robot that may lead the robot to execute a series of instructions, depending on external conditions. { ə'dap-tiv 'branch }

**adaptive communications** [COMMUN] A communications system capable of automatic change to meet changing inputs or changing characteristics of the device or process being controlled. Also known as self-adjusting communications, self-optimizing communications. { ə'dap-tiv kə ,myü-nə'kə-shənz }

**adaptive control** [CONT SYS] A control method in which one or more parameters are sensed and used to vary the feedback control signals in order to satisfy the performance criteria. { ə'dap-tiv kən'tröl }

**adaptive differential pulse-code modulation** [COMMUN] A method of compressing speech and music signals in which the transmitted signals represent differences between input signals and predicted signals, and these predicted signals are synthesized by predictors with response functions representative of the short- and long-term correlation inherent in the signal. Abbreviated ADPCM. { ə'dap-tiv ,dif-ə'ren-chəl 'pōls ,cōd ,mäj-ə,lä-shən }

**adaptive equalization** [COMMUN] A signal-processing technique designed to compensate for impairments in received signals over a communications channel resulting from imperfect transmission characteristics. { ə'dap-tiv ,ēkwə-lə,zā-shən }

**adaptive filter** [ELECTR] An electric filter whose frequency response varies with time, as a function of the input signal. { ə'dap-tiv 'fil-tər }

**adaptive robot** [CONT SYS] A robot that can alter its responses according to changes in the environment. { ə'dap-tiv 'rō,bät }

- adaptive signal processing** [COMMUN] The design of adaptive systems for signal-processing applications. { 'adap-tiv 'sig-nəl 'prə-sə-siŋ }
- adaptive structure** [ENG] A structure whose geometric and inherent structural characteristics can be changed beneficially in response to external stimulation by either remote commands or automatic means. { 'adap-tiv 'strək-tʃər }
- adaptive system** [SYS ENG] A system that can change itself in response to changes in its environment in such a way that its performance improves through a continuing interaction with its surroundings. { 'adap-tiv 'sis-təm }
- adaptive system theory** [COMPUT SCI] The branch of automata theory dealing with adaptive, or self-organizing, systems. { 'adap-tiv 'sis-təm 'the-ə-rē }
- adaptor** [COMPUT SCI] A printed circuit board that is plugged into an expansion slot in a computer to communicate with an external peripheral device. { 'adap-tər }
- Adcock antenna** [ELECTROMAG] A pair of vertical antennas separated by a distance of one-half wavelength or less and connected in phase opposition to produce a radiation pattern having the shape of a figure eight. { 'ad-käk ,an'ten-ə }
- Adcock direction finder** [NAV] A radio direction finder utilizing one or more pairs of Adcock antennas. { 'ad-käk də'rek-shən ,fīn-dər }
- ADCON** See address constant. { 'ad,kän }
- adconductor cathode** [ELECTR] A cathode in which adsorbed alkali metal atoms provide electron emission in a glow or arc discharge. { 'ad-kən'dəkt-tər 'kath,əd }
- add** See add operation. { ad }
- adder** [COMPUT SCI] A computer device that can form the sum of two or more numbers or quantities. [ELECTR] A circuit in which two or more signals are combined to give an output-signal amplitude that is proportional to the sum of the input-signal amplitudes. Also known as adder circuit. { 'ad-ər }
- adder circuit** See adder. { 'ad-ər ,sər-kət }
- add-in** [COMPUT SCI] An electronic component that can be placed on a printed circuit board already installed in a computer to enhance the computer's capability. { 'ad ,in }
- adding circuit** [ELECTR] A circuit that performs the mathematical operation of addition. { 'ad-ɪŋ 'sər-kət }
- adding machine** [COMPUT SCI] A device which performs the arithmetical operation of addition and subtraction. { 'ad-ɪŋ mə,ʃən }
- add-in program** [COMPUT SCI] A computer program that enhances the capabilities of a particular application. { 'ad,in ,prō-gram }
- addition item** [COMPUT SCI] An item which is to be filed in its proper place in a computer. { 'ad-i-shən 'ɪd-əm }
- addition record** [COMPUT SCI] A new record inserted into an updated master file. { 'ad-i-shən ,rek-əd }
- addition table** [COMPUT SCI] The part of memory that holds the table of numbers used in addition

in a computer employing table look-up techniques to carry out this operation. { 'ad-i-shən ,tā-bəl }

**additive synthesis** [ENG ACOUS] A method of synthesizing complex tones by adding together an appropriate number of simple sine waves at harmonically related frequencies. { 'ad-ə-div 'sin-thə-səs }

**additive white Gaussian noise** [COMMUN] Noise that contains equal energy per frequency across the spectrum of the noise employed. Also known as white noise. Abbreviated AWGN. { 'ad-əd-iv wīt [gəu-'sē-ən 'nɔɪz }

**add-on** [COMPUT SCI] A peripheral device, such as a printer or disk drive, that is added to a basic computer. { 'ad,ɒn }

**add-on memory** [COMPUT SCI] Computer storage that is added to the original main storage to enhance the computer's processing capability. { 'ad,ɒn 'mem-rē }

**add operation** [COMPUT SCI] An operation in computer processing in which the sum of two or more numbers is placed in a storage location previously occupied by one of the original numbers. Also known as add. { 'ad ,əp-ə,rā-shən }

**address** [COMPUT SCI] The number or name that uniquely identifies a register, memory location, or storage device in a computer. { 'ad-res }

**addressable** [COMPUT SCI] Capable of being located by a computer through an addressing technique. { 'adres-ə-bəl }

**addressable cursor** [COMPUT SCI] A cursor that can be moved by software or keyboard controls to any point on the screen. { 'adres-ə-bəl 'kər-sər }

**address book** [COMPUT SCI] A feature in an e-mail program for storing e-mail addresses. { 'ad-rəs ,bʊk }

**address bus** [COMPUT SCI] An internal computer communications channel that carries addresses from the central processing unit to components under the unit's control. { 'ad-res ,bʌs }

**address computation** [COMPUT SCI] The modification by a computer of an address within an instruction, or of an instruction based on results obtained so far. Also known as address modification. { 'ad-res ,kəm-pyə'tā-shən }

**address constant** [COMPUT SCI] A value, or its expression, used in the calculation of storage addresses from relative addresses for computers. Abbreviated ADCON. Also known as base address; presumptive address; reference address. { 'ad-res ,kän-stənt }

**address conversion** [COMPUT SCI] The use of an assembly program to translate symbolic or relative computer addresses. { 'ad-res kən,vər-zhən }

**address counter** [COMPUT SCI] A counter which increments an initial memory address as a block of data is being transferred into the memory locations indicated by the counter. { 'ad-res ,kaunt-ər }

**address field** [COMPUT SCI] The portion of a computer program instruction which specifies where a particular piece of information is located in the computer memory. { 'ad-res ,fēld }

## address format

- address format** [COMPUT SCI] A description of the number of addresses included in a computer instruction. { 'ad-res ,fôr-mat }
- address-free program** [COMPUT SCI] A computer program in which all addresses are represented as displacements from the expected contents of a base register. { 'ad-res |frē-'prô-grâm }
- address generation** [COMPUT SCI] An addressing technique which facilitates addressing large storages and implementing dynamic program relocation; the effective main storage address is obtained by adding together the contents of the base register of the index register and of the displacement field. { 'ad-res ,jen-â'râ-shôn }
- addressing** [COMPUT SCI] 1. The methods of locating and gaining access to information in a computer's storage. 2. The methods of selecting a particular peripheral device from several that are available at a given time. { 'âd-res-ij }
- addressing mode** [COMPUT SCI] The specific technique by means of which a memory reference instruction will be spelled out if the computer word is too small to contain the memory address. { 'âd-res-ij ,môd }
- addressing system** [COMPUT SCI] A labeling technique used to identify storage locations within a computer system. { 'âd-res-ij ,sis-təm }
- address interleaving** [COMPUT SCI] The assignment of consecutive addresses to physically separate modules of a computer memory, making possible the very-high-speed access of a sequence of contiguously addressed words, since all modules operate nearly simultaneously. { 'ad-res ,in-târ'lêv-ij }
- addressless instruction format** *See* zero-address instruction format. { 'âd-res-lôs ,in'strôk-shôn 'fôr-mat }
- address modification** *See* address computation. { 'ad-res ,mäd-â-fô-kâ-shôn }
- address part** [COMPUT SCI] That part of a computer instruction which contains the address of the operand, of the result, or of the next instruction. { 'ad-res ,pârt }
- address register** [COMPUT SCI] A register wherein the address part of an instruction is stored by a computer. { 'ad-res ,rej-â-stâr }
- address resolution** [COMPUT SCI] 1. The process of obtaining the actual machine address needed to perform an operation. 2. The process by which the address used to identify a workstation on a local-area network is translated to an address that can be handled on the Internet. { 'ad-res ,rez-â,lü-shôn }
- address sort routine** [COMPUT SCI] A debugging routine which scans all instructions of the program being checked for a given address. { 'ad-res 'sôrt ,rü'tên }
- address space** [COMPUT SCI] The number of storage locations available to a computer program. { 'ad-ras ,spâs }
- address track** [COMPUT SCI] A path on a magnetic tape, drum, or disk on which are recorded addresses used in the retrieval of data stored on other tracks. { 'ad-res ,trak }
- address translation** [COMPUT SCI] The assignment of actual locations in a computer memory to virtual addresses in a computer program. { 'ad-res tranz'lâ-shôn }
- add-subtract time** [COMPUT SCI] The time required to perform an addition or subtraction, exclusive of the time required to obtain the quantities from storage and put the sum or difference back into storage. { 'ad sâb'trakt ,tîm }
- add time** [COMPUT SCI] The time required by a computer to perform an addition, not including the time needed to obtain the addends from storage and put the sum back into storage. { 'ad ,tîm }
- add-to-memory technique** [COMPUT SCI] In direct-memory-access systems, a technique which adds a data word to a memory location; permits linear operations such as data averaging on process data. { |ad tō |mem-rē 'tek-nêk }
- adequacy** [ELEC] The existence of sufficient facilities within an electric power system to satisfy the customer load requirement under static system conditions. { 'ad-â-kwâ-sê }
- ADF** *See* automatic direction finder.
- ad hoc inquiry** [COMPUT SCI] A single request for a piece of information, such as a report. { 'ad |hâk in'kwî-rê }
- A-display** [ELECTR] A radar display in cartesian coordinates; the targets appear as vertical deflection lines; their Y coordinates are proportional to signal intensity; their X coordinates are proportional to distance to targets. Also known as A-indicator; A-scan; A-scope. { 'âdi ,splâ }
- adjacency** [COMPUT SCI] A condition in character recognition in which two consecutive graphic characters are separated by less than a specified distance. { 'âjâs-ân-sê }
- adjacent-channel interference** [COMMUN] Interference that is caused by a transmitter operating in an adjacent channel. Also known as A-scan; A-scope. { 'âjâs-ânt 'chan-âl in-târ'fir-ôns }
- adjacent-channel selectivity** [ELECTR] The ability of a radio receiver to respond to the desired signal and to reject signals in adjacent frequency channels. { 'âjâs-ânt 'chan-âl sâ ,lek'tiv-âd-ê }
- adjustable resistor** [ELEC] A resistor having one or more sliding contacts whose position may be changed. { 'âjâs-tâ-bâl ri'zîs-târ }
- adjustable transformer** *See* variable transformer. { 'âjâs-tâ-bâl tranz'fôr-mâr }
- adjusted decibel** [ELECTR] A unit used to show the relationship between the interfering effect of a noise frequency, or band of noise frequencies, and a reference noise power level of -85 dBm. Abbreviated dBa. Also known as decibel adjusted. { 'âjâs-tâd 'des-â ,bel }
- admittance** [ELEC] A measure of how readily alternating current will flow in a circuit; the



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reciprocal of impedance, it is expressed in siemens. {ad'mit-əns }

**admittance matrix** [ELEC] A matrix Y whose elements are the mutual admittances between the various meshes of an electrical network, it satisfies the matrix equation  $I = YV$ , where I and V are column vectors whose elements are the currents and voltages in the meshes. {ad'mit-əns 'mā-triks }

**ADP** See automatic data processing.

**ADPCM** See adaptive differential pulse-code modulation.

**ADR studio** [ENG ACOUS] A sound-recording studio used in motion-picture and television production to allow an actor who did not intelligibly record his or her speech during the original filming or video recording to do so by watching himself or herself on the screen and repeating the original speech with lip synchronism; it is equipped with facilities for recreating the acoustical liveness and background sound of the environment of the original dialog. Derived from -automatic dialog replacement studio. Also known as postsynchronizing studio. {ā'dē'ār ,stüd-ē-ō }

**ADSEL** See Mode S.

**ADSL** See asymmetric digital subscriber line; asynchronous digital subscriber loop. {a-dē-es 'el or 'ad-səl }

**ADT** See abstract data type.

**advanced battery** [ELEC] A large battery storage system designed to harness solar or wind energy or to store excess electricity during low-demand periods for use during higher-demand periods. {ad'vānst 'bād-ə-rē }

**Advanced Research Projects Agency Network** [COMPUT SCI] The computer network developed by the U.S. Department of Defense in 1969 from which the Internet originated. Abbreviated ARPANET. {əd,vānst rī'sərch ,prā ,jeks ,ā-jən-sē ,net,wərk }

**advanced signal-processing system** [COMPUT SCI] A portable data-processing system for military use; its complete configuration may consist of the analyzer unit, a postprocessing unit (for data-processing and control tasks), and an advanced signal-processing display unit. Also known as Proteus. {əd'vānst 'sig-nəl 'präs-əs-iŋ ,sis-təm }

**Advanced Television Technology Center** [COMMUN] A private, nonprofit corporation organized by members of the television broadcasting and consumer products industries to test and recommend technologies for the delivery and reception of new U.S. digital services. Abbreviated ATTC. {əd'vānst 'tel-ə,vizh-ən tek'nāl-ə-jē sen-tər }

**aerial** See antenna. {'e-rē-əl }

**aerogenerator** [ELEC] A generator that is driven by the wind, designed to utilize wind power on a commercial scale. {,e-rō'jen-ə,rād-ər }

**aeronautical mobile satellite service** [COMMUN] A mobile satellite service in which the mobile earth stations are located on board aircraft. Abbreviated AMSS. {,er-ə'nöd-ə-kəl ,mō-bəl 'sād-əl,īt ,sər-vəs }

**aeronautical mobile service** [COMMUN] A mobile service between aircraft stations and land stations, or between aircraft stations, in which survival craft stations may also participate. {,er-ə 'nöd-ə-kəl ,mō-bəl 'sar-vəs }

**aerophare** See radio beacon. {'e-rə'fer }

**aerospace electronics** [ELECTR] The field of electronics as applied to aircraft and spacecraft. {'e-rō'spās i,lek'trən-iks }

**aF** See abfarad.

**AFC** See automatic frequency control.

**affinity** [COMPUT SCI] A specific relationship between data processing elements that requires one to be used with the other, where a choice might otherwise exist. {ə'fin-əd-ē }

**a format** [COMPUT SCI] A nonexecutable statement in FORTRAN which permits alphanumeric characters to be transmitted in a manner similar to numeric data. {'ā 'fōr,māt }

**AGC** See automatic gain control.

**age coating** [ELEC] The black deposit that is formed on the inner surface of an electric lamp by material evaporated from the filament. {āj 'kōd-iŋ }

**agenda** [COMPUT SCI] 1. The sequence of control statements required to carry out the solution of a computer problem. 2. A collection of programs used for manipulating a matrix in the solution of a problem in linear programming. {ə'jen-də }

**aggregate data type** See scalar data type. {'ag-rə-gət 'dā-də tīp }

**aggregate function** [COMPUT SCI] A command in a database management program that performs an arithmetic operation on the values in a specified column or field in all the records in the database, such as computing their sum or average or counting the number of records that satisfy particular criteria. {'ag-rə-gət 'fəŋk-shən }

**aggressive device** [COMPUT SCI] A unit of a computer that can initiate a request for communication with another device. {ə'gres-iv di'vīs }

**aging** [ELEC] Allowing a permanent magnet, capacitor, meter, or other device to remain in storage for a period of time, sometimes with a voltage applied, until the characteristics of the device become essentially constant. [ENG]

1. The changing of the characteristics of a device due to its use. 2. Operation of a product before shipment to stabilize characteristics or detect early failures. {'āj-iŋ }

**AGP** See accelerated graphics port.

**agricultural robot** [CONTSYS] A robot used to pick and harvest farm products and fruits. {'ag-rə 'kəl-chə-rəl 'rō,bāt }

**aH** See abhenry.

**Ah** See ampere-hour.

**aided tracking** [ENG] A system of radar-tracking a target signal in bearing, elevation, or range, or any combination of these variables, in which the rate of motion of the tracking equipment is machine-controlled in collaboration with an operator so as to minimize tracking error. {'ā-d-əd 'trak-iŋ }

**aided-tracking mechanism** [ENG] A device consisting of a motor and variable-speed drive

which provides a means of setting a desired tracking rate into a director or other fire-control instrument, so that the process of tracking is carried out automatically at the set rate until it is changed manually. { 'äd-äd 'trak-iŋ ,mek-ö ,niz-äm }

**aided-tracking ratio** [ENG] The ratio between the constant velocity of the aided-tracking mechanism and the velocity of the moving target. { 'äd-äd 'trak-iŋ ,rä-shö }

**A/in.<sup>2</sup>** See ampere per square inch.

**A-indicator** See A-display. { 'ä ,in-dö,käd-ör }

**air battery** [ELEC] A connected group of two or more air cells; also, a single air cell. { 'er 'bad-ö-rë }

**airblast circuit breaker** [ELEC] An electric switch which, on opening, utilizes a high-pressure gas blast (air or sulfur hexafluoride) to break the arc. { 'er,blast 'sör-kat 'bräk-ör }

**airborne collision avoidance system** [NAV] A navigation system for preventing collisions between aircraft that relies primarily on equipment carried on the aircraft itself, but which may make use of equipment already employed in the ground-based air-traffic control system. Abbreviated ACAS. { 'er,börn ka'lizh-än ä'vöid-äns ,sis-täm }

**airborne collision warning system** [ENG] A system such as a radar set or radio receiver carried by an aircraft to warn of the danger of possible collision. { 'er,börn ka'lizh-än 'wörn-iŋ ,sis-täm }

**airborne detector** [ENG] A device, transported by an aircraft, whose function is to locate or identify an air or surface object. { 'er,börn di 'tek-tör }

**airborne electronic survey control** [ENG] The airborne portion of very accurate positioning systems used in controlling surveys from aircraft. { 'er,börn i,lek'trän-ik 'sör-vä kan'tröl }

**airborne intercept radar** [ENG] Airborne radar used to track and "lock on" to another aircraft to be intercepted or followed. { 'er,börn 'in-tör ,sept ,rä,där }

**airborne profile recorder** [ENG] An electronic instrument that emits a pulsed-type radar signal from an aircraft to measure vertical distances between the aircraft and the earth's surface. Abbreviated APR. Also known as terrain profile recorder (TPR). { 'er,börn 'prö,fil ri,körd-ör }

**airborne radar** [ENG] Radar equipment carried by aircraft to assist in navigation by pilotage, to determine drift, and to locate weather disturbances; a very important use is locating other aircraft either for avoidance or attack. { 'er,börn 'rä,där }

**airborne self-protection jammer** [ELECTR] An electronic system carried by an aircraft to prevent detection by enemy radar by emitting signals that deceive the radar, causing confusion and uncertainty. { 'er,börn |self-prö'tek-shän ,jam-ör }

**air-break switch** See air switch. { 'er,'bräk ,swich }

**air capacitor** [ELEC] A capacitor having only air as the dielectric material between its plates. Also known as air condenser. { 'er kö'pas-äd-ör }

**air cell** [ELECTR] A cell in which depolarization at the positive electrode is accomplished chemically by reduction of the oxygen in the air. { 'er,sel }

**air check** [ENG ACOUS] A recording made of a live radio broadcast for filing purposes at the broadcasting facility. { 'er ,chek }

**air condenser** See air capacitor. { 'er ,kän'dens-ör }

**air-control center** [COMMUN] An area set aside in a submarine for the control of aircraft; it is the equivalent of a combat information center on an aircraft or a ship. { 'er,kän'tröl ,sent-ör }

**air-cooled condenser** See air condenser. { 'er ,küld kän'dens-ör }

**air-core coil** [ELECTR] An inductor without a magnetic core. { 'er ,kör ,köil }

**aircraft antenna** [ELECTR] An airborne device used to detect or radiate electromagnetic waves. { 'er,kraft an'ten-ö }

**aircraft detection** [ENG] The sensing and discovery of the presence of aircraft; major techniques include radar, acoustical, and optical methods. { 'er,kraft di'tek-shän }

**air-depolarized battery** [ELEC] A primary battery which is kept depolarized by atmospheric oxygen rather than chemical compounds. Also known as metal-air battery. { 'er de'pö'l-ö,rizd 'bad-ö-rë }

**air gap** [ELECTR] 1. A gap or an equivalent filler of nonmagnetic material across the core of a choke, transformer, or other magnetic device. 2. A spark gap consisting of two electrodes separated by air. 3. The space between the stator and rotor in a motor or generator. { 'er ,gap }

**air-ground communication** [COMMUN] Two-way communication between aircraft and stations on the ground. { 'er,'gräund kə,myü-nö'kä-shän }

**air-insulated substation** [ELEC] An electric power substation that has the busbars and equipment terminations generally open to air and utilizes insulation properties of ambient air for insulation to ground. { 'er 'in-sä'läd-äd 'söb,stä-shän }

**air mileage indicator** [ENG] An instrument on an airplane which continuously indicates mileage through the air. { 'er ,mī-lij 'in-dö'käd-ör }

**air mileage unit** [ENG] A device which derives continuously and automatically the air distance flown, and feeds this information into other units, such as an air mileage indicator. { 'er ,mī-lij ,yü-nöt }

**air navigation** [NAV] The process of directing and monitoring the progress of an aircraft between selected geographic points or with respect to some predetermined plan. Also known as aviation. { 'er ,nav-ö'gä-shän }

**airport surface detection equipment** [ENG] Radar and other equipment specifically designed to assist in the control of aircraft and the many other vehicles that must use taxiways and other surface routes in the airport area. Also known as surface movement radar. { 'er,pört 'sör-fæs di'tek-shän i,kwip-mönt }

**airport surveillance radar** [ENG] Radar designed for air surveillance and to assist in air traffic management in the area of airports; designated as ASR in the United States nomenclature.

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usually composed of both primary and secondary radars. { 'er,pört sər'vā-ləns ,rā,dār }  
**air-route surveillance radar** [ENG] Radar designed for air surveillance along established air routes to assist, through netted data operation, in air traffic management. Often in rather remote locations, such radars are designed for minimum on-site operator and maintenance attention. Abbreviated ARSR. { 'er ,rüt sər'vā-ləns ,rā,dār }  
**air-spaced coax** [ELECTROMAG] Coaxial cable in which air is basically the dielectric material; the conductor may be centered by means of a spirally wound synthetic filament, beads, or braided filaments. { 'er ,späst 'kō,aks }  
**airspeed indicator** [ENG] A device that computes and displays the speed of an aircraft relative to the air mass in which the aircraft is flying. { 'er ,spēd ,in-də,kād-ər }  
**air surveillance** [ENG] Systematic observation of the airspace by visual, electronic, or other means, primarily for identifying all aircraft in that airspace, and determining their movements. { 'er sər'vā-ləns }  
**air surveillance radar** [ENG] Radar of moderate range providing position of aircraft by azimuth and range data without elevation data; used for air-traffic control. { 'er sər'vā-ləns ,rā,dār }  
**air survey** See aerial survey. { 'er ,sər,vā }  
**air switch** [ELEC] A switch in which the breaking of the electric circuit takes place in air. Also known as air-break switch. { 'er ,swich }  
**air terminal** [ELEC] A structure, such as a tower, that serves as a lightning arrester. { 'er ,tərm-ən-əl }  
**air-traffic control radar beacon system** [NAV] A system adopted by the Federal Aviation Agency for use in controlling air traffic over the United States; the aircraft carry identification transponders designed to transmit an airplane identity code, altitude, and additional message when interrogated by an air-traffic controller's equipment. Abbreviated ATCRBS. { 'er ,traf-ik kən'trōl ,rā,dār 'bē-kan ,sis-təm }  
**air-variable capacitor** [ELEC] A device with one rotating and one fixed set of metal plates positioned in meshed fashion and separated by air; capacitance is varied by rotating one set of plates to vary the overlap with the fixed plates. { 'er ,ver-ē-ə-bəl kə'pas-əd-ər }  
**airwave** [ELECTR] A radio wave used in radio and television broadcasting. { 'er,wāv }  
**alarm signal** [ELECTR] The international radio-telegraph alarm signal transmitted to actuate automatic devices that sound an alarm indicating that a distress message is about to be broadcast. { ə'lärm ,sig-nəl }  
**alarm system** [ENG] A system which operates a warning device after the occurrence of a dangerous or undesirable condition. { ə'lärm ,sis-təm }  
**ALC** See automatic level control.  
**alert box** [COMPUT SCI] A dialog box that warns of an existing condition or the consequences of a command that has been given, or explains why a command cannot be executed. { ə'lərt ,bäks }

**alerting signal** [COMMUN] Specific signal that is applied to subscriber access lines to indicate an incoming call. { ə'lərt-ɪŋ 'sig-nəl }  
**Alexanderson antenna** [ELECTROMAG] An antenna, used at low or very low frequencies, consisting of several base-loaded vertical radiators connected together at the top and fed at the bottom of one radiator. { ,al-ig'zan-dər-sən ən ,ten-ə }  
**Alford loop** [ELECTROMAG] An antenna utilizing multielements which usually are contained in the same horizontal plane and adjusted so that the antenna has approximately equal and in-phase currents uniformly distributed along each of its peripheral elements and produces a substantially circular radiation pattern in the plane of polarization; it is known for its purity of polarization. { ə'l-fərd ,lūp }  
**algebraic computation system** See symbolic system. { ,al-ja,bṛā-ik ,käm-pyū'tā-shən ,sis-təm }  
**algebraic manipulation language** [COMPUT SCI] A programming language used in the solution of analytic problems by symbolic computation. { ,al-ja,bṛā-ik mə-ni-pyū'lā-shən ,laj-gwɪj }  
**Algol** [COMPUT SCI] An algorithmic and procedure-oriented computer language used principally in the programming of scientific problems. { 'al ,gɔl }  
**algorithmic error** [COMPUT SCI] An error in computer processing resulting from imprecision in the method used to carry out mathematical computations, usually associated with either rounding or truncation of numbers. { ,al-gə ,rɪθ-mik 'er-ər }  
**algorithmic language** [COMPUT SCI] A language in which a procedure or scheme of calculations can be expressed accurately. { ,al-gə ,rɪθ-mik 'laj-gwɪj }  
**algorithm translation** [COMPUT SCI] A step-by-step computerized method of translating one programming language into another programming language. { 'al-gə ,rɪθ-əm tranz'lā-shən }  
**alias** [COMPUT SCI] 1. An alternative entry point in a computer subroutine at which its execution may begin, if so instructed by another routine. 2. An alternative name for a file or device. { 'ā-lē-əs }  
**aliasing** [COMPUT SCI] In computer graphics, the jagged appearance of diagonal lines on printouts and on video monitors. { 'āl-yəs-ɪŋ }  
**alignment** [ELECTR] The process of adjusting components of a system for proper interrelationship, including the adjustment of tuned circuits for proper frequency response and the time synchronization of the components of a system. { ə'lɪn-mənt }  
**alignment wire** See ground wire. { ə'lɪn-mənt ,wɪr }  
**alive** See energized. { ə'lɪv }  
**alkaline cell** [ELEC] A primary cell that uses an alkaline electrolyte, usually potassium hydroxide, and delivers about 1.5 volts at much higher current rates than the common carbon-zinc cell. Also known as alkaline-manganese cell. { 'al-kə ,lɪn ,sel }

## alkaline-manganese cell

**alkaline-manganese cell** See alkaline cell. { 'al-ka, līn |maŋ-gə,nēs ,sel }

**alkaline storage battery** [ELEC] A storage battery in which the electrolyte consists of an alkaline solution, usually potassium hydroxide. { 'al-ka ,līn 'stōr-ij ,bad-ə-rē }

**all-channel tuning** [COMMUN] The ability of a television set to receive ultra-high-frequency as well as very-high-frequency channels. { 'ōl ,chan-əl 'tūn-ij }

**all-diffused monolithic integrated circuit** [ELECTR] Microcircuit consisting of a silicon substrate into which all of the circuit parts (both active and passive elements) are fabricated by diffusion and related processes. { 'ōl dā'fjūzd ,mān-əl'ith-ik 'in-tə,grād-əd 'sər-kət }

**all-digital AM IBOC** [COMMUN] The final mode of the AM IBOC system approved by the Federal Communications Commission for use in the United States that increases data capacity by increasing signal power and adjusting the bandwidth of the digital sidebands to minimize adjacent channel interference; uses four frequency partitions and no analog carrier. In this mode, the digital audio data rate can change from 40 to 60 kbits/s, and the corresponding ancillary data rate will remain at 0.4 kbits/s. { 'ōl dij-əd-əl 'ā ,em 'tī,bāk }

**all-digital FM IBOC** [COMMUN] The third of three modes in the FM IBOC system approved by the Federal Communications Commission for use in the United States that increases data capacity by adding additional digital carriers; uses four frequency partitions and no analog carrier. In this mode, the digital audio data rate can range from 64 to 96 kbits/s, and the corresponding ancillary data rate can range from 213 kbits/s for 64-kbits/s audio to 181 kbits/s for 96-kbits/s audio. { 'ōl dij-əd-əl 'ef,em 'tī,bāk }

**alligator clip** [ELEC] A long, narrow spring clip with meshing jaws; used with test leads to make temporary connections quickly. Also known as crocodile clip. { 'al-ə,gād-ər ,klip }

**allocate** [COMPUT SCI] To place a portion of a computer memory or a peripheral unit under control of a computer program, through the action of an operator, program instruction, or executive program. { 'a-lō,kāt }

**allotter** [COMMUN] A telephone term referring to a distributor, which allots an idle line-finder in preparation for an additional call. { ə'lād-ər }

**alloy junction** [ELECTR] A junction produced by alloying one or more impurity metals to a semiconductor to form a *p* or *n* region, depending on the impurity used. Also known as fused junction. { 'a,lōi ,jəŋk-shən }

**alloy-junction diode** [ELECTR] A junction diode made by placing a pill of doped alloying material on a semiconductor material and heating until

the molten alloy melts a portion of the semiconductor, resulting in a *pn* junction when the dissolved semiconductor recrystallizes. Also known as fused-junction diode. { 'a,lōi ,jəŋk-shən 'dī ,ōd }

**alloy-junction transistor** [ELECTR] A junction transistor made by placing pellets of a *p*-type impurity such as indium above and below an *n*-type wafer of germanium, then heating until the impurity alloys with the germanium to give a *pn*p transistor. Also known as fused-junction transistor. { 'a,lōi ,jəŋk-shən tranz'is-tər }

**all-pass network** [ELECTR] A network designed to introduce a phase shift in a signal without introducing an appreciable reduction in energy of the signal at any frequency. { 'ōl 'pas 'net ,wərk }

**all-translational system** [CONT SYS] A simple robotic system in which there is no rotation of the robot or its components during movements of the robot's body. { 'ōl ,tranz'lā-shən-əl 'sis-təm }

**all-wave receiver** [ELECTR] A radio receiver capable of being tuned from about 535 kilohertz to at least 20 megahertz; some go above 100 megahertz and thus cover the FM band also. { 'ōl ,wāv rī'sē-vər }

**aloha** [COMMUN] A radio-channel random-access technique that depends on positive acknowledgement of correct receipt for error control. { ə'lō-ə }

**alpha** [ELECTR] The ratio between the change in collector current and the change in emitter current of a transistor. { 'al-fə }

**alphabetic character** [COMPUT SCI] A letter or other symbol used to form data, other than a digit. { 'al-fə|bed-ik 'kar-ik-tər }

**alphabetic coding** [COMPUT SCI] 1. Abbreviation of words for computer input. 2. A system of coding with a number system of base 26, the letters of the alphabet being used instead of the cardinal numbers. { 'al-fə|bed-ik 'kōd-ij }

**alphabetic string** See character string. { 'al-fə |bed-ik 'strɪŋ }

**alpha cutoff frequency** [ELECTR] The frequency at the high end of a transistor's range at which current amplification drops 3 decibels below its low-frequency value. { 'al-fə 'kəd,ōf ,frē,kwən-sē }

**alphageometric technique** See alphamosaic technique. { 'al-fə,jē-ə'me-trɪk ,tek,nēk }

**alphanumeric characters** See alphanumeric characters. { 'al-fə|mer-ik 'kar-ik-təz }

**alphanumeric typebar** [COMPUT SCI] A metal bar containing the alphabet, the ten numerical characters, and the ampersand, in use in electromechanical accounting machines. { 'al-fə|mer-ik 'tɪp,bār }

**alphamosaic technique** [COMPUT SCI] In computer graphics, a technique for displaying very-low-resolution images by constructing them from a set of elementary graphics characters. Also known as alphageometric technique. { 'al-fə-mō'zā-ik ,tek,nēk }

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**alphanumeric characters** [COMPUT SCI] All characters used by a computer, including letters, numerals, punctuation marks, and such signs as \$, @, and #. Also known as alphameric characters. { 'al-fa-nū,mer-ik 'kar-ik-təz }

**alphanumeric display device** [ELECTR] A device which visibly represents alphanumeric output information from some signal source. { 'al-fa-nū,mer-ik dis'plā di,vīs }

**alphanumeric instruction** [COMPUT SCI] The name given to instructions which can be read equally well with alphabetic or numeric kinds of fields of data. { 'al-fa-nū,mer-ik in'strə-k-shən }

**alphanumeric pager** [COMMUN] A receiver in a radio paging system that contains a device which can display text or numeric messages. { 'al-fa-nū,mer-ik 'pā-jər }

**alphanumeric reader** [ELECTR] A device capable of reading alphabetic, numeric, and special characters and punctuation marks. { 'al-fa-nū,mer-ik 'rēd-ər }

**alpha test** [COMPUT SCI] A test of software carried out at the user's location and using actual data. { 'al-fə, 'test }

**alpha test site** [COMPUT SCI] A place where a complete computer system is tested with actual data and transactions. { 'al-fə, 'test, 'sīt }

**alternate-channel interference** [COMMUN] Interference that is caused in one communications channel by a transmitter operating in the next channel beyond an adjacent channel. Also known as second-channel interference. { 'ōl-tər-nət, 'chan-əl in-tər'fir-əns }

**alternate index** See secondary index. { 'ōl-tər-nət 'in,deks }

**alternate key** [COMPUT SCI] A key on a computer keyboard that does not itself generate a character but changes the nature of the character generated by another key when depressed simultaneously with it; similar to the control and shift keys. Abbreviated ALT key. { 'ōl-tər-nət, 'kē }

**alternate routing** [COMMUN] The operation of a switching center when all circuits are found busy in a programmed route to the destination, and the call is offered to another programmed route. { 'ōl-tər-nət 'rūt-ŋ }

**alternate track** [COMPUT SCI] The disk track used if, after a disk volume is initialized, a defective track is sensed by the system. { 'ōl-tər-nət 'trak }

**alternating current** [ELEC] Electric current that reverses direction periodically, usually many times per second. Abbreviated ac. { 'ōl-tər,nād-ŋ, 'kər-ənt }

**alternating-current circuit theory** [ELEC] The mathematical description of conditions in an electric circuit driven by an alternating source or sources. { 'ōl-tər,nād-ŋ, 'kər-ənt 'sər-kət, 'thē-ə-rē }

**alternating-current coupling** [ELECTR] A coupling which passes alternating-current signals but blocks direct-current signals. { 'ōl-tər,nād-ŋ, 'kər-ənt 'kəp-ŋŋ }

**alternating-current/direct-current** [ELECTR] Pertaining to electronic equipment capable of operation from either an alternating-current or

direct-current primary power source. { 'ōl-tər,nād-ŋ, 'kər-ənt di'rekt, 'kər-ənt }

**alternating-current dump** [ELECTR] The removal of all alternating-current power from a computer intentionally, accidentally, or conditionally. { 'ōl-tər,nād-ŋ, 'kər-ənt 'dɒmp }

**alternating-current erase** [ELECTR] The use of an alternating current to energize a tape recorder erase head in order to remove previously recorded signals from a tape. { 'ōl-tər,nād-ŋ, 'kər-ənt ə'rās }

**alternating-current erasing head** [ELECTR] In magnetic recording, an erasing head which uses alternating current to produce the magnetic field necessary for erasing. { 'ōl-tər,nād-ŋ, 'kər-ənt ə'rās-ŋ, 'hed }

**alternating-current generator** [ELEC] A machine, usually rotary, which converts mechanical power into alternating-current electric power. { 'ōl-tər,nād-ŋ, 'kər-ənt 'jen-ə,rād-ər }

**alternating-current magnetic biasing** [ELECTR] Biasing with alternating current, usually well above the signal frequency range, in magnetic tape recording. { 'ōl-tər,nād-ŋ, 'kər-ənt mag'nēd-ik 'bī-əs-ŋŋ }

**alternating-current motor** [ELEC] A machine that converts alternating-current electrical energy into mechanical energy by utilizing forces exerted by magnetic fields produced by the current flow through conductors. { 'ōl-tər,nād-ŋ, 'kər-ənt 'mōd-ər }

**alternating-current network** [ELEC] An electrical network that has elements with both resistance and reactance. { 'ōl-tər,nād-ŋ, 'kər-ənt 'net, 'wɜrk }

**alternating-current power supply** [ELEC] A power supply that provides one or more alternating-current output voltages, such as an ac generator, dynamotor, inverter, or transformer. { 'ōl-tər,nād-ŋ, 'kər-ənt 'paʊ-ər sɒ,plī }

**alternating-current resistance** See high-frequency resistance. { 'ōl-tər,nād-ŋ, 'kər-ənt rī'zīs-təns }

**alternating-current transmission** [ELECTR] In television, that form of transmission in which a fixed setting of the controls makes any instantaneous value of signal correspond to the same value of brightness for only a short time. { 'ōl-tər,nād-ŋ, 'kər-ənt tranz'mish-ən }

**alternating voltage** [ELEC] Periodic voltage, the average value of which over a period is zero. { 'ōl-tər,nād-ŋ, 'vōl-tij }

**alternator** [ELEC] A mechanical, electrical, or electromechanical device which supplies alternating current. { 'ōl-tər,nād-ər }

**altitude delay** [ELECTR] Synchronization delay introduced between the time of transmission of the radar pulse and the start of the trace on the indicator to eliminate the altitude/height hole on the plan position indicator-type display. { 'al-tə, 'tūd dī'lā }

**altitude hole** [ELECTR] The blank area in the center of a plan position indicator-type radarscope display caused by the time interval between transmission of a pulse and the receipt of the first ground return. { 'al-tə, 'tūd, 'hōl }

## altitude signal

**altitude signal** [ELECTR] The radio signals returned to an airborne electronics device by the ground or sea surface directly beneath the aircraft. { 'al-tə,tūd ,sig-nəl }

**ALT key** See alternate key. { 'ölt 'kē }

**ALU** See arithmetical unit.

**aluminum arrester** See aluminum-cell arrester. { ə'lūm-ə-nəm ə'res-tər }

**aluminum cable steel-reinforced** [ELEC] A type of power transmission line made of an aluminum conductor provided with a core of steel. Abbreviated ACSR. { ə'lūm-ə-nəm 'kā-bəl 'stēl ,rē-in'fōrst }

**aluminum-cell arrester** [ELEC] A lightning arrester consisting of a number of electrolytic cells in series formed from aluminum trays containing electrolyte. Also known as aluminum arrester; electrolytic arrester. { ə'lūm-ə-nəm ,sel ə'res-tər }

**aluminum conductor** [ELEC] Any of several aluminum alloys employed for conducting electric current; because its weight is one-half that of copper for the same conductance, it is used in high-voltage transmission lines. { ə'lūm-ə-nəm kən'dəkt-ər }

**A/m<sup>2</sup>** See ampere per square meter.

**AM** See amplitude modulation.

**amateur bands** [COMMUN] Bands of frequencies assigned to licensed radio amateurs. { 'a-mə-čar ,bānz }

**amateur radio** [ELECTR] A radio used for two-way radio communications by private individuals as leisure-time activity. Also known as ham radio. { 'a-mə-čar 'rād-ē,ō }

**ambiguity** [ELECTR] The condition in which a synchro system or servosystem seeks more than one null position. [ELECTROMAG] In radar, the consequence of using a periodic waveform in estimating a target's range and, in coherent radar, its radial velocity by Doppler sensing; deliberate change of periodicity is used to help resolve these ambiguities. { ,am-bə'gyū-əd-ē }

**ambiguity error** [COMPUT SCI] An error in reading a number represented in a digital display that can occur when this representation is changing, for example, the number 699 changing to 700 might be read as 799 because of imprecise synchronization in the changing of digits. { ,am-bə'gyū-əd-ē ,er-ər }

**ambiguous name** [COMPUT SCI] A name of a file or other item which is only partially specified, it is useful in conducting a search of all the items to which it might apply. { əm'big-yə-wəs 'nām }

**AMC** See automatic modulation control.

**Amdahl's law** [COMPUT SCI] A law stating that the speed-up that can be achieved by distributing a computer program over  $p$  processors cannot exceed  $1/f + (1 - f/p)$ , where  $f$  is the fraction of the work of the program that must be done in serial mode. { 'am,dälz ,lō }

**amendment record** See change record. { ə'mend-mənt ,rek-ərd }

**American Standard Code for Information Interchange** [COMMUN] Coded character set to be

used for the general interchange of information among information-processing systems, communications systems, and associated equipment, the standard code, comprising characters 0 through 127, includes control codes, upper- and lower-case letters, numerals, punctuation marks, and commonly used symbols; an additional set is known as extended ASCII. Abbreviated ASCII. { ə'mer-ə-kən 'stān-dərd 'kōd fər in-fər'mā-shən 'in-tər,čhān }

**AM field signature** [ELECTR] The characteristic pattern of an alternating magnetic field, as displayed by detection and classification equipment. { |jəm 'fēld ,sig-nə-čhər }

**A min** See ampere-minute.

**AML** See automatic modulation limiting.

**AMLCD** See active-matrix liquid-crystal display.

**ammeter** [ENG] An instrument for measuring the magnitude of electric current flow. Also known as electric current meter. { 'a,mēd-ər }

**amorphous memory array** [COMPUT SCI] An array of memory switches made of amorphous material. { ə'mór-fəs 'mem-rē ə,rā }

**amortisseur winding** See damper winding. { ə'mórd-ə'sər 'wīnd-ŋ }

**amp** See ampere; ampere. { amp }

**ampacity** [ELEC] Current-carrying capacity in amperes; used as a rating for power cables. { əm'pas-əd-ē }

**amperage** [ELEC] The amount of electric current in amperes. Abbreviated amp. { 'am-prij }

**ampere** [ELEC] The unit of electric current in the rationalized meter-kilogram-second system of units; defined in terms of the force of attraction between two parallel current-carrying conductors. Abbreviated A, amp. { 'am,pir }

**Ampère balance** See current balance. { 'am,pir ,bal-əns }

**ampere-hour** [ELEC] A unit for the quantity of electricity, obtained by integrating current flow in amperes over the time in hours for its flow, used as a measure of battery capacity. Abbreviated Ah, amp-hr. { 'am,pir 'aü-ər }

**ampere-hour capacity** [ELEC] The charge, measured in ampere-hours, that can be delivered by a storage battery up to the limit to which the battery may be safely discharged. { 'am,pir 'aü-ər kə'pas-əd-ē }

**ampere-hour meter** [ENG] A device that measures the total electric charge that passes a given point during a given period of time. { 'am,pir 'aü-ər ,mēd-ər }

**ampere-minute** [ELEC] A unit of electrical charge, equal to the charge transported in 1 minute by a current of 1 ampere, or to 60 coulombs. Abbreviated A min. { |am,pir 'min-ət }

**ampere per square inch** [ELEC] A unit of current density, equal to the uniform current density of a current of 1 ampere flowing through an area of 1 square inch. Abbreviated A/in<sup>2</sup>. { 'am,pir pər ,skwer 'inč }

**ampere per square meter** [ELEC] The SI unit of current density. Abbreviated A/m<sup>2</sup>. { 'am,pir pər ,skwer 'mēd-ər }

**amp-hr** See ampere-hour.

## amplitude-versus-frequency distortion

### amplitude-versus-frequency distortion [ELECTR]

The distortion caused by the nonuniform attenuation or gain of the system, with respect to frequency under specified terminal conditions. { 'am-plə,tüd |vər-səs |frē-kwən-sē d' stör-shən }

### AM radio See amplitude-modulation radio. { |ä |em 'rād-ē,ō }

### AM signature [COMMUN] A graphic representation of the significant identifying characteristics of an amplitude-modulated signal. { |ä |em 'sig-nə-čär }

### AMSS See aeronautical mobile satellite service.

### analog [ELECTR] 1. A physical variable which remains similar to another variable insofar as the proportional relationships are the same over some specified range, for example, a temperature may be represented by a voltage which is its analog. 2. Pertaining to devices, data, circuits, or systems that operate with variables which are represented by continuously measured voltages or other quantities. { 'an-əl,äg }

### analog adder [ELECTR] A device with one output voltage which is a weighted sum of two input voltages. { 'an-əl,äg 'ad-ər }

### analog channel [ELECTR] A channel on which the information transmitted can have any value between the channel limits, such as a voice channel. { 'an-əl,äg 'čän-əl }

### analog communications [COMMUN] System of telecommunications employing a nominally continuous electric signal that varies in frequency, amplitude, or other characteristic, in some direct correlation to nonelectrical information (sound, light, and so on) impressed on a transducer. { 'an-əl,äg kə,myü-nə 'kə-shənz }

### analog comparator [ELECTR] 1. A comparator that checks digital values to determine whether they are within predetermined upper and lower limits. 2. A comparator that produces high and low digital output signals when the sum of two analog voltages is positive and negative, respectively. { 'an-əl,äg kəm'par-əd-ər }

### analog computer [COMPUT SCI] A computer in which quantities are represented by physical variables; problem parameters are translated into equivalent mechanical or electrical circuits as an analog for the physical phenomenon being investigated. { 'an-əl,äg kəm'pyüd-ər }

### analog data [COMPUT SCI] Data represented in a continuous form, as contrasted with digital data having discrete values. { 'an-əl,äg 'dād-ə }

### analog-digital computer See hybrid computer. { 'an-əl,äg 'dij-ə-təl kəm,pyüd-ər }

### analog indicator [ELECTR] A device in which the result of a measurement is indicated by a pointer deflection or other visual quantity. { 'an-əl,äg 'in-də,kād-ər }

### analog monitor [ELECTR] A display unit that accepts only analog signals, which must be converted from digital signals by the computer's video display board. { 'an-əl,äg 'mən-əd-ər }

### analog multiplexer [ELECTR] A multiplexer that provides switching of analog input signals to allow use of a common analog-to-digital converter. { 'an-əl,äg 'məl-tə,plek-sər }

### analog multiplier [ELECTR] A device that accepts two or more inputs in analog form and then produces an output proportional to the product of the input quantities. { 'an-əl,äg 'məl-tə ,plī-ər }

### analog network [ELECTR] A circuit designed so that circuit variables such as voltages are proportional to the values of variables in a system under study. { 'an-əl,äg 'net,work }

### analog output [CONT SYS] Transducer output in which the amplitude is continuously proportional to a function of the stimulus. { 'an-əl,äg 'aüt,püt }

### analog recording [ELECTR] Any method of recording in which some characteristic of the recording signal, such as amplitude or frequency, is continuously varied in a manner analogous to the time variations of the original signal. { 'an-əl,äg rī'kórd-ŋ }

### analog signal [ELECTR] A nominally continuous electrical signal that varies in amplitude or frequency in response to changes in sound, light, heat, position, or pressure. { 'an-əl,äg 'sig-nəl }

### analog simulation [COMPUT SCI] The representation of physical systems and phenomena by variables such as translation, rotation, resistance, and voltage. { 'an-əl,äg ,sīm-yə'lā-shən }

### analog switch [ELECTR] 1. A device that either transmits an analog signal without distortion or completely blocks it. 2. Any solid-state device, with or without a driver, capable of bilaterally switching voltages or current. { 'an-əl,äg ,swič }

### analog-to-digital converter [ELECTR] A device which translates continuous analog signals into proportional discrete digital signals. { |an-əl,äg tə |dij-ət-əl kən'vərd-ər }

### analog-to-frequency converter [ELECTR] A converter in which an analog input in some form other than frequency is converted to a proportional change in frequency. { |an-əl,äg tə |frē-kwən-sē kən'vərd-ər }

### analog voltage [ELECTR] A voltage that varies in a continuous fashion in accordance with the magnitude of a measured variable. { 'an-əl,äg 'vöł-tij }

### analysis by synthesis [COMMUN] A method of determining the parameters of a speech coder in which the consequence of choosing a particular value of a coder parameter is evaluated by locally decoding the signal and comparing it to the original input signal. { ə'näl-ə-sis ,bī 'sīn-thə-səs }

### analytical engine [COMPUT SCI] An early-19th-century form of mechanically operated digital computer. { ,an-əl'id-ə-kəl 'en-jən }

### analytical function generator [ELECTR] An analog computer device in which the dependence of an output variable on one or more input variables is given by a function that also appears in a physical law. Also known as natural function generator; natural law function generator. { ,an-əl'id-ə-kəl 'fəŋk-shən ,jen-ə,rād-ər }

### analytic hierarchy [MATH] A systematic procedure for representing the elements of any

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problem which breaks down the problem into its smaller constituents and then calls for only simple pairwise comparison judgments to develop priorities at each level. { 'än-äl'id-ik'hī-är, 'är-kē }

**analyzer** [COMPUT SCI] 1. A routine for the checking of a program. 2. One of several types of computers used to solve differential equations. [ENG] A multifunction test meter, measuring volts, ohms, and amperes. Also known as set analyzer. { 'an-äl, 'līz-är }

**anchor** [COMPUT SCI] A tag that indicates either the source or destination of a hyperlink; for example, HTML anchors are used to create links within a document or to another document. { 'än-kör }

**anchored graphic** [COMPUT SCI] A picture or graph that remains at a fixed position on a page of a document rather than being attached to the text. { 'än-körd 'graf-ik }

**anchor frame** [COMMUN] In MPEG-2, a video frame that is used for prediction, I-frames and P-frames are generally used as anchor frames, but B-frames are never anchor frames. { 'än-kör, 'främ }

**AND circuit** See AND gate. { 'and, 'sär-kät }

**Anderson bridge** [ELECTR] A six-branch modification of the Maxwell-Wien bridge, used to measure self-inductance in terms of capacitance and resistance; bridge balance is independent of frequency. { 'an-där-sän, 'brīj }

**AND gate** [ELECTR] A circuit which has two or more input-signal ports and which delivers an output only if and when every input signal port is simultaneously energized. Also known as AND circuit; passive AND gate. { 'and, 'gät }

**AND/NOR gate** [ELECTR] A single logic element whose operation is equivalent to that of two AND gates with outputs feeding into a NOR gate. { 'and, 'nör, 'gät }

**AND NOT gate** [ELECTR] A coincidence circuit that performs the logic operation AND NOT, under which a result is true only if statement A is true and statement B is not. Also known as AND NOT B gate. { 'and, 'nät, 'gät }

**AND-OR circuit** [ELECTR] Gating circuit that produces a prescribed output condition when several possible combined input signals are applied; exhibits the characteristics of the AND gate and the OR gate. { 'and, 'ör, 'sär-kät }

**AND-OR-INVERT gate** [ELECTR] A logic circuit with four inputs,  $a_1$ ,  $a_2$ ,  $b_1$ , and  $b_2$ , whose output is 0 only if either  $a_1$  and  $a_2$  or  $b_1$  and  $b_2$  are 1. Abbreviated A-O-I gate. { 'and, 'ör in'vört, 'gät }

**angel echo** [ENG] A radar echo from a region where there are no visible targets; may be caused by insects, birds, or refractive index variations in the atmosphere. { 'än-jäl, 'ek-ō }

**angle diversity** [COMMUN] Diversity reception in which beyond-the-horizon tropospheric scatter signals are received at slightly different angles, equivalent to paths through different scatter volumes in the troposphere. { 'än-gäl, 'dä'vör-säd-ē }

**angle jamming** [ELECTR] Electronic countermeasures used to introduce large errors in angle-measuring radars; methods involve producing a false echo with pulse-to-pulse modulation that is inverse to that otherwise produced by a radar using conical scanning, or the generation of multiple interfering signals that may confuse monopulse radars. { 'än-gäl, 'jam-ig }

**angle marker** See azimuth marker. { 'än-gäl, 'märk-är }

**angle modulation** [ELECTR] The variation in the angle of a sine-wave carrier; particular forms are phase modulation and frequency modulation. Also known as sinusoidal angular modulation. { 'än-gäl, 'mäj-äl-lä-shän }

**angle of deflection** [ELECTR] The angle through which the electron beam in a cathode-ray tube is diverted from a straight path. { 'än-gäl, 'äv di'flek-shän }

**angle of departure** See angle of radiation. { 'än-gäl, 'äv di'pä-r-čär }

**angle of divergence** [ELECTR] The angular spread of an electron beam in an oscilloscope. { 'än-gäl, 'äv dä'vör-čäns }

**angle tracking noise** [ELECTR] Deviation of the tracking axis or other angle estimate from the true angle of a radar target; it results from target reflective behavior and propagation path characteristics (such as fluctuation, glint, and scintillation) and also from the radar's own receiver, mechanical or computational noise. { 'än-gäl, 'trak-ig, 'nōiz }

**angular error of closure** See error of closure. { 'än-gäl-är 'er-är, 'äv 'klōzh-är }

**angular resolver** See resolver. { 'än-gäl-är, 'nī'zälv-är }

**ANL** See automatic noise limiter.

**annotation** [COMPUT SCI] Any comment or note included in a program or flow chart in order to clarify some point at issue. { 'än-äl'tä-shän }

**annual service availability index** [ELEC] The ratio of customer-hours of service supplied by an electrical utility during one year to the customer-hours requested, expressed as a percentage. { 'än-yä-wäl, 'sär-väs, 'äväl-äl'bil-äd-ē, 'in, 'deks }

**annular conductor** [ELEC] A number of wires stranded in three reversed concentric layers around a saturated hemp core. { 'än-yäl-är, 'kän'däk-tör }

**annular transistor** [ELECTR] Mesa transistor in which the semiconductor regions are arranged in concentric circles about the emitter. { 'än-yäl-är, 'tran'zis-tör }

**annunciator** [ENG] A signaling apparatus which operates electromagnetically and serves to indicate visually, or visually and audibly, whether a current is flowing, has flowed, or has changed direction of flow in one or more circuits. { 'än-nän-sē-äd-är }

**anode** [ELEC] The terminal at which current enters a primary cell or storage battery; it is positive with respect to the device, and negative with respect to the external circuit. [ELECTR] 1. The collector of electrons in an electron tube.



## anode balancing coil

- Also known as plate; positive electrode. **2.** In a semiconductor diode, the terminal toward which forward current flows from the external circuit. { 'a,nōd }
- anode balancing coil** [ELEC] A set of mutually coupled windings used to maintain approximately equal currents in anodes operating in parallel from the same transformer terminal. { 'a,nōd |bal-əns-iŋ ,kōil }
- anode characteristic** [ELECTR] Relationship of anode current to anode voltage in a vacuum tube. { 'a,nōd ,kər-ik-tə'ris-tik }
- anode circuit** [ELECTR] Complete external electrical circuit connected between the anode and the cathode of an electron tube. Also known as plate circuit. { 'a,nōd ,sər-kət }
- anode-circuit detector** [ELECTR] Detector functioning by virtue of a nonlinearity in its anode-circuit characteristic. Also known as plate-circuit detector. { 'a,nōd |sər-kət di,tek-tər }
- anode current** [ELECTR] The electron current flowing through an electron tube from the cathode to the anode. Also known as plate current. { 'a,nōd ,kər-ənt }
- anode dark space** [ELECTR] A thin, dark region next to the anode glow in a glow-discharge tube. { 'a,nōd 'därk ,späs }
- anode detector** [ELECTR] A detector in which rectification of radio-frequency signals takes place in the anode circuit of an electron tube. Also known as plate detector. { 'a,nōd di,tek-tər }
- anode dissipation** [ELECTR] Power dissipated as heat in the anode of an electron tube because of bombardment by electrons and ions. { 'a,nōd dis-ə'pā-shən }
- anode drop** *See* anode fall. { 'a,nōd ,dräp }
- anode efficiency** [ELECTR] The ratio of the ac load circuit power to the dc anode power input for an electron tube. Also known as plate efficiency. { 'a,nōd i,fiʃ-ən-sē }
- anode fall** [ELECTR] **1.** A very thin space-charge region in front of an anode surface, characterized by a steep potential gradient through the region. **2.** The voltage across this region. Also known as anode drop. { 'a,nōd ,fəl }
- anode glow** [ELECTR] A thin, luminous layer on the surface of the anode in a glow-discharge tube. { 'a,nōd ,glō }
- anode impedance** [ELECTR] Total impedance between anode and cathode exclusive of the electron stream. Also known as plate impedance; plate-load impedance. { 'a,nōd im ,pēd-əns }
- anode input power** [ELECTR] Direct-current power delivered to the plate (anode) of a vacuum tube by the source of supply. Also known as plate input power. { 'a,nōd 'in,püt ,paü-ər }
- anode modulation** [ELECTR] Modulation produced by introducing the modulating signal into the anode circuit of any tube in which the carrier is present. Also known as plate modulation. { 'a,nōd ,mäj-ə'lä-shən }
- anode neutralization** [ELECTR] Method of neutralizing an amplifier in which the necessary 180° phase shift is obtained by an inverting network in the plate circuit. Also known as plate neutralization. { 'a,nōd ,nü-trə-lə'zä-shən }
- anode pulse modulation** [ELECTR] Modulation produced in an amplifier or oscillator by application of externally generated pulses to the plate circuit. Also known as plate-pulse modulation. { 'a,nōd 'puls ,mäj-ə'lä-shən }
- anode rays** [ELECTR] Positive ions coming from the anode of an electron tube; generally due to impurities in the metal of the anode. { 'a,nōd ,rāz }
- anode resistance** [ELECTR] The resistance value obtained when a small change in the anode voltage of an electron tube is divided by the resulting small change in anode current. Also known as plate resistance. { 'a,nōd ri,zis-təns }
- anode saturation** [ELECTR] The condition in which the anode current of an electron tube cannot be further increased by increasing the anode voltage; the electrons are then being drawn to the anode at the same rate as they are emitted from the cathode. Also known as current saturation; plate saturation; saturation; voltage saturation. { 'a,nōd ,sach-ə'rä-shən }
- anode sheath** [ELECTR] The electron boundary which exists in a gas-discharge tube between the plasma and the anode when the current demanded by the anode circuit exceeds the random electron current at the anode surface. { 'a,nōd ,shēth }
- anodized dielectric film** [ELEC] An insulating film produced on a conducting surface by anodizing; used for producing thin-film capacitors, trimming resistor values, and passivation in the manufacture of integrated circuits. { 'an-ə,dīzd di-ə'lek-trik 'film }
- anomalous Funkel effect** [ELECTR] Current fluctuations in an electron tube resulting from positive ions entering the space-charge region in front of the cathode. { ə'nām-ə-ləs 'fəŋ-kəl i ,fekt }
- anomalous skin effect** [ELEC] The skin effect at very low temperatures and high frequencies at which the thickness of the conducting skin layer is less than the electron mean free path, so that the classical theory of electrical conductivity breaks down. { ə'nām-ə-ləs 'skin i ,fekt }
- anomaly detection** [COMPUT SCI] The technology that seeks to identify an attack on a computer system by looking for behavior that is out of the norm. { ə'nām-ə-lē di,tek-shən }
- anonymous FTP** [COMPUT SCI] A public FTP (file transfer protocol) site at which users can log in and download documents by entering

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"anonymous" as their user ID, and their e-mail address as password. { 'ä,nän-ö-mös |eff|tē'pē }

**anotron** [ELECTR] A cold-cathode glow-discharge diode having a copper anode and a large cathode of sodium or other material. { 'an-ö,trä:n }

**A-N radio range** [NAV] A type of radio beacon station whose signals provide definite track guidance for aircraft by establishing four radial lines of position which can be identified by a continuous-tone signal made up of keyed pulses of equal amplitude representing the Morse code letters A and N. { |ä |en 'räd-ē,ö ,ränj }

**answer back** [COMPUT SCI] The ability of a device such as a computer or terminal to automatically identify itself when it is contacted by another communicating device. { 'an-sär |bak }

**answering cord** [ELEC] Cord nearest the face of the switchboard which is used for answering subscribers' calls and incoming trunks. { 'an-sär-ij ,körd }

**answering jack** [ELEC] Jack on which a station calls in and is answered by an operator. { 'an-sär-ij ,jak }

**answer lamp** [ELEC] Telephone switchboard lamp that lights when an answer cord is plugged into a line jack; the lamp goes out when the call is completed. { 'an-sär ,lamp }

**answer-only modem** [COMMUN] A modem that can answer but not initiate a call. { |an-sär ,ön-lē 'mö,dem }

**antenna** [ELECTROMAG] A device used for radiating or receiving radio waves. Also known as aerial; radio antenna. { an'ten-ö }

**antenna amplifier** [ELECTROMAG] One or more stages of wide-band electronic amplification placed within or physically close to a receiving antenna to improve signal-to-noise ratio and mutually isolate various devices receiving their feed from the antenna. { an'ten-ö 'am-plä,fi-ər }

**antenna circuit** [ELECTR] A complete electric circuit which includes an antenna. { an'ten-ö ,sär-kät }

**antenna coil** [ELECTROMAG] Coil through which antenna current flows. { an'ten-ö ,köil }

**antenna counterpoise** See counterpoise. { an'ten-ö 'kaünt-ər,pöiz }

**antenna coupler** [ELECTROMAG] A radio-frequency transformer, tuned line, or other device used to transfer energy efficiently from a transmitter to a transmission line or from a transmission line to a receiver. { an'ten-ö ,kəp-lər }

**antenna crosstalk** [ELECTROMAG] The ratio or the logarithm of the ratio of the undesired power received by one antenna from another to the power transmitted by the other. { an'ten-ö 'krös ,tök }

**antenna directive gain** [ELECTROMAG] The ratio of the spatial power density on transmit, or sensitivity on receive, experienced at a distant point for using an idealized (lossless) directive antenna, as in radar, to that density of sensitivity experienced had an imaginary

isotropic antenna been used. { |an'ten-ö 'dö'rek-tiv ,gän }

**antenna directivity diagram** [ELECTROMAG] Curve representing, in polar or cartesian coordinates, a quantity proportional to the gain of an antenna in the various directions in a particular plane or cone. { an'ten-ö di-rek'tiv-əd-ē 'dī-ə,gram }

**antenna effect** [ELECTROMAG] A distortion of the directional properties of a loop antenna caused by an input to the direction-finding receiver which is generated between the loop and ground, in contrast to that which is generated between the two terminals of the loop. Also known as electrostatic error; vertical component effect. { an'ten-ö 'ifekt }

**antenna efficiency** [ELECTROMAG] The ratio of the amount of power radiated into space by an antenna to the total energy received by the antenna. { an'ten-ö i,fish-ən-sē }

**antenna field** [ELECTROMAG] A group of antennas placed in a geometric configuration. { an'ten-ö ,fēld }

**antenna gain** [ELECTROMAG] A measure of the effectiveness of a directional antenna as compared to a standard nondirectional antenna. Also known as gain. { an'ten-ö ,gän }

**antenna loading** [ELECTR] 1. The amount of inductance or capacitance in series with an antenna, which determines the antenna's electrical length. 2. The practice of loading an antenna in order to increase its electrical length. { an'ten-ö ,löd-ij }

**antenna matching** [ELECTROMAG] Process of adjusting impedances so that the impedance of an antenna equals the characteristic impedance of its transmission line. { an'ten-ö ,mach-ij }

**antenna pair** [ELECTROMAG] Two antennas located on a base line of accurately surveyed length, sometimes arranged so that the array may be rotated around an axis at the center of the base line; used to produce directional patterns and in direction finding. { an'ten-ö ,per }

**antenna pattern** See radiation pattern. { an'ten-ö ,pad-ərn }

**antenna polarization** [ELECTROMAG] The orientation of the electric field lines in the electromagnetic field radiated or received by the antenna. { an'ten-ö ,pö-lə-rä-zä-shən }

**antenna power** [ELECTROMAG] Radio-frequency power delivered to an antenna. { an'ten-ö ,paü-ər }

**antenna power gain** [ELECTROMAG] The ratio of the spatial power density on transmit, or sensitivity on receive, experienced at a distant point for using an actual directive antenna, as in radar, to that density or sensitivity experienced had an imaginary isotropic antenna been used. Power gain will, then, be slightly less than directive gain, differing by the insertion loss of the actual antenna, and is the gain actually measured in constructed antennas and used in most calculations about radar performance. { an'ten-ö 'paü-ər ,gän }

## antenna resistance

- antenna resistance** [ELECTROMAG] The power supplied to an entire antenna divided by the square of the effective antenna current measured at the point where power is supplied to the antenna. {an'ten-ə rɪzɪs-təns}
- antenna scanner** [ELECTROMAG] A microwave feed horn which moves in such a way as to illuminate sequentially different reflecting elements of an antenna array and thus produce the desired field pattern. {an'ten-ə skan-ər}
- antenna tilt error** [ENG] Angular difference between the tilt angle of a radar antenna shown on a mechanical indicator, and the electrical center of the radar beam. {an'ten-ə 'tɪlt ,er-ər}
- antialiasing technique** [COMPUT SCI] In computer graphics, a technique for smoothing the jagged appearance of diagonal lines on printouts and on video monitors. {an-tē'ā-lī-ē-əs-iŋ ,tek,nēk}
- antiparallel switch** [ELECTR] A switch designed to have low capacitance between its terminals when open. {an-tē-kə'pas-ə-təns ,swɪtʃ}
- anticathode** [ELECTR] The anode or target of an x-ray tube, on which the stream of electrons from the cathode is focused and from which x-rays are emitted. {an-tē'kath,əd}
- anticipatory staging** [COMPUT SCI] Moving blocks of data from one storage device to another prior to the actual request for them by the program. {an'tɪs-ə-pə,tɔr-ē 'stāj-iŋ}
- anticlutter gain control** [ELECTR] Device which automatically and smoothly increases the gain of a radar receiver from a low level to the maximum, within a specified period after each transmitter pulse, so that short-range echoes producing clutter are amplified less than long-range echoes. {an-tē'klad-ər 'gān kən,trol}
- anticoincidence circuit** [ELECTR] Circuit that produces a specified output pulse when one (frequently predesignated) of two inputs receives a pulse and the other receives no pulse within an assigned time interval. {an-tē,kɔ'ɪn-sə-dəns ,sər-kət}
- anticollision radar** [ENG] A radar set designed to give warning of possible collisions during movements of ships or aircraft. {an-tē-kə'li-zhən ,rā,dār}
- antifading antenna** [ELECTR] An antenna designed to confine radiation mainly to small angles of elevation to minimize the fading of radiation directed at larger angles of elevation. {an-tē'fād-iŋ an'ten-ə}
- antiglare shield** [COMPUT SCI] A sheet of non-reflective material placed over the screen of an electronic display to reduce the amount of light reflected from the screen. {an-tē,glər 'shēld}
- anti-g suit** See g suit. {an-tē,jē ,sūt}
- antihunt circuit** [ELECTR] A stabilizing circuit used in a closed-loop feedback system to prevent self-oscillations. {an-tē,hənt ,sər-kət}
- anti-intrusion technology** [COMPUT SCI] One of the different ways in which an attack on a computer system can be detected and countered, including prevention, deterrence, detection, deflection, and diminution. {an-tē,ɪn'tru-zhən ,tek'nɔl-ə-jē}
- antijamming** [ELECTR] Any system or technique used to counteract the jamming of communications or of radar operation; part of electronic protection. {an-tē'jam-iŋ}
- antimagnetic** [ENG] Constructed so as to avoid the influence of magnetic fields, usually by the use of nonmagnetic materials and by magnetic shielding. {an-tē,mag'ned-ɪk}
- antinnoise microphone** [ENG ACOUS] Microphone with characteristics which discriminate against acoustic noise. {an-tē'nɔɪz 'mɪ-kro ,fɒn}
- antireflection coating** [ENG] The application of a thin film of dielectric material to a surface to reduce its reflection and to increase its transmission of light or other electromagnetic radiation. {an-tē-rɪ'flek-shən ,kɔd-iŋ}
- antiresonance** See parallel resonance. {an-tē'res-ən-əns}
- antiresonant circuit** See parallel resonant circuit. {an-tē'rez-ən-ənt 'sər-kət}
- anti-sidetone circuit** [ELEC] Telephone circuit which prevents sound, introduced in the local transmitter, from being reproduced in the local receiver. {an-tē'sɪd,tɒn ,sər-kət}
- antistatic mat** [COMPUT SCI] A floor mat placed in front of a device such as a tape drive that is sensitive to discharges of static electricity to safeguard against loss of data from such discharges during human handling of the device. {an-tē'stad-ɪk 'mat}
- anti-transmit-receive tube** [ELECTR] A switching tube that prevents the received echo signal from being dissipated in the transmitter. {an-tē-tranz'mɪt rɪ'sɪv ,tʊb}
- antivirus software** [COMPUT SCI] Software that is designed to protect against computer viruses. {an-tē,vɪ-rəs 'sɒf,wər}
- A-O-I gate** See AND-OR-INVERT gate. {ə,ɔ'ɪ ,gæt}
- APC** See automatic phase control.
- aperiodic antenna** [ELECTROMAG] Antenna designed to have constant impedance over a wide range of frequencies because of the suppression of reflections within the antenna system; includes terminated wave and rhombic antennas. {ə,pɪr-ē'dɪk an'ten-ə}
- aperiodic waves** [ELEC] The transient current wave in a series circuit with resistance R, inductance L, and capacitance C when  $R^2C = 4L$ . {ə,pɪr-ē'dɪk 'wævz}
- aperture** [ELECTR] An opening through which electrons, light, radio waves, or other radiation can pass. {'ap-ə,ʃər}
- aperture antenna** [ELECTROMAG] Antenna in which the beam width is determined by the dimensions of a horn, lens, or reflector. {'ap-ə ,ʃər an'ten-ə}
- aperture grill picture tube** [ELECTR] An in-line gun-type picture tube in which the shadow mask is perforated by long, vertical stripes and the screen is coated with vertical phosphor stripes. {'ap-ə,ʃər ,grɪl 'pɪk-ʃər ,tʊb}
- aperture mask** See shadow mask. {'ap-ə,ʃər ,mask}

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**aperture plate** [ELECTR] A small part of a piece of perforated ferromagnetic material that forms a magnetic cell. { 'ap-ə, chər, plāt }

**API** See application program interface.

**APL** [COMPUT SCI] An interactive computer language whose operators accept and produce arrays with homogeneous elements of type number or character.

**apodization** [ELECTR] A technique for modifying the response of a surface acoustic wave filter by varying the overlap between adjacent electrodes of the interdigital transducer. { ,ə-pə-də'zā-shən }

**A positive** [ELEC] Symbolized A+. 1. Positive terminal of an A battery or positive polarity of other sources of filament voltage. 2. Denoting the terminal to which the positive side of the filament voltage source should be connected. { ,ā 'pāz-əd-iv }

**A power supply** See A supply. { 'ā 'pau-ər sə,plī }

**apparent power** [ELEC] The product of the root-mean-square voltage and the root-mean-square current delivered in an alternating-current circuit, no account being taken of the phase difference between voltage and current. { ə'pa-rənt 'pau-ər }

**apparent source** See effective center. { ə'pa-rənt 'sɔrs }

**Applegate diagram** [ELECTR] A graph of the electron paths in a two-cavity klystron tube, showing how electron bunching occurs. { 'ap-əl,gāt 'dī-ə ,grām }

**applet** [COMPUT SCI] A small program, typically written in Java. { 'ap-lət }

**appliance** [ENG] A piece of equipment that draws electric or other energy and produces a desired work-saving or other result, such as an electric heater, a radio, or an electronic range. { ə'plī-əns }

**appliance panel** [ENG] In electric systems, a metal housing containing two or more devices (such as fuses) for protection against excessive current in circuits which supply portable electric appliances. { ə'plī-əns ,pan-əl }

**application** [COMPUT SCI] A computer program that performs a specific task, for example, a word processor, a Web browser, or a spread sheet. { ,ap-lə'kā-shən }

**application development language** [COMPUT SCI] A very-high-level programming language that generates coding in a conventional programming language or provides the user of a database management system with a programming language that is easier to implement than conventional programming languages. { ,ap-lə'kā-shən dī'vel-əp-mənt ,lɑŋ-gwɪj }

**application development system** [COMPUT SCI] An integrated group of software products used to assist in the efficient development of computer programs and systems. { ,ap-lə'kā-shən dī'vel-əp-mənt ,sis-təm }

**application generator** [COMPUT SCI] A commercially prepared software package used to create applications programs or parts of such programs. { ,ap-lə'kā-shən ,jən-ə,rād-ər }

**application package** [COMPUT SCI] A combination of required hardware, including remote inputs and outputs, plus programming of the computer memory to produce the specified results. { ,ap-lə'kā-shən ,pak-ij }

**application processor** [COMPUT SCI] A computer that processes data. { ,ap-lə'kā-shən 'prə ,ses-ər }

**application program** [COMPUT SCI] A program written to solve a specific problem, produce a specific report, or update a specific file. { ,ap-lə'kā-shən ,prō-gram }

**application program interface** [COMPUT SCI] A language that enables communication between computer programs, in particular between application programs and control programs. Abbreviated API. { ,ap-lə'kā-shən ,prō-gram 'in-tər,fās }

**application server** [COMPUT SCI] A computer that executes commands requested by a Web server to fetch data from databases. Also known as app server. { ,ap-lə'kā-shən ,sɛr-vər }

**application-specific integrated circuit** [ELECTR] An integrated circuit that is designed for a particular application by integrating standard cells from a library, making possible short design times and rapid production cycles. Abbreviated ASIC. { ,ap-lə'kā-shən spɪ'sɪf-ɪk ,int-ɪ,grəd-əd 'sɛr-kot }

**application study** [COMPUT SCI] The detailed process of determining a system or set of procedures for using a computer for definite functions of operations, and establishing specifications to be used as a base for the selection of equipment suitable to the specific needs. { ,ap-lə'kā-shən ,stəd-ē }

**application system** [COMPUT SCI] A group of related applications programs designed to perform a specific function. { ,ap-lə'kā-shən ,sis-təm }

**application window** [COMPUT SCI] In a graphical user interface, the chief window of an application program, with a title bar, a menu bar, and a work area. { ,ap-lə'kā-shən ,wɪn,dō }

**applicative language** [COMPUT SCI] A programming language in which functions are repeatedly applied to the results of other functions and, in its pure form, there are no statements, only expressions without side effects. { 'ap-lə ,kād-iv 'lɑŋ-gwɪj }

**applied epistemology** [COMPUT SCI] The use of machines or other models to simulate processes such as perception, recognition, learning, and selective recall, or the application of principles assumed to hold for human categorization, perception, storage, search, and so on, to the design of machines, machine programs, scanning, storage, and retrieval systems. { ə'plɪd ɪpɪs-tə 'mäl-ə-jē }

**appliqué circuit** [ELEC] Special circuit which is provided to modify existing equipment to allow for special usage; for example, some carrier telephone equipment designed for ringdown manual operation can be modified through the use of an appliqué circuit to allow for use between points having dial equipment. { ,ap-lə 'kɑ ,sɛr-kot }

**approach vector** [COMPUT SYS] A vector that describes the orientation of a robot gripper and points in the direction from the gripper approaches a workpiece. {ə'prəʊtʃ ,vek-tər}

**app server** See application server. {'ap ,sɜ:v-ər}

**APT** See Automatic Programming Tool.

**APT system** See automatic picture-transmission system. { ,ā ,pæ'tē ,sis-təm }

**aquadag** [ELECTR] Graphite coating on the inside of certain cathode-ray tubes for collecting secondary electrons emitted by the face of the tube. {'ak-wə ,dæg }

**arbiter** [COMPUT SCI] A computer unit that determines the priority sequence in which two or more processor inputs are connected to a single functional unit such as a multiplier or memory. {'ār-bəd-ər }

**arbitrary function generator** See general-purpose function generator. {'ār-bə ,trɛr-ē 'fɒŋk-shən ,jɛn-ə ,rād-ər }

**arbitration** [COMPUT SCI] The set of rules in a computer's operating system for allocating the resources of the computer, such as its peripheral devices or memory, to more than one program or user. { ,ər-bə'trā-shən }

**arc** See electric arc. {'ārk }

**arcback** [ELECTR] The flow of a principal electron stream in the reverse direction in a mercury-vapor rectifier tube because of formation of a cathode spot on an anode; this results in failure of the rectifying action. Also known as backfire. {'ārk ,bak }

**arc chute** [ELEC] A collection of insulating barriers in a circuit breaker for confining the arc and preventing it from causing damage. {'ārk ,ʃhūt }

**arc converter** [ELECTR] A form of oscillator using an electric arc as the generator of alternating or pulsating current. {'ārk kən ,vɔ:d-ər }

**arc discharge** [ELEC] A direct-current electrical current between electrodes in a gas or vapor, having high current density and relatively low voltage drop. {'ārk 'dis ,chārj }

**Archie** [COMPUT SCI] A system of file servers that searches for specific files that are publicly available in File Transfer Protocol archives on the Internet. {'ār-čē }

**archival storage** [COMPUT SCI] Storage of infrequently used or backup information that cannot be readily or immediately accessed by a computer system. {'ār ,kɪv-əl 'stɔ:r-ɪj }

**archiving** [COMPUT SCI] The storage of files in auxiliary storage media for very long periods, in the event it is necessary to regenerate the file due to subsequent errors introduced. {'ār ,kɪv-ɪŋ }

**arcing contacts** [ELEC] Special contacts on which the arc is drawn after the main contacts of a switch or circuit breaker have opened. {'ār-ɪŋ ,kən ,tæks }

**arcing ring** [ELEC] A metal ring attached to an insulator to protect it from damage by a power arc. {'ār-ɪŋ ,rɪŋ }

**arcing time** [ELEC] 1. Interval between the parting, in a switch or circuit breaker, of the arcing contacts and the extension of the arc. 2. Time elapsing, in a fuse, from the severance of the fuse

link to the final interruption of the circuit under a specified condition. {'ār-ɪŋ ,tɪm }

**arc lamp** [ELEC] An electric lamp in which the light is produced by an arc made when current flows through ionized gas between two electrodes. Also known as electric-arc lamp. {'ār ,læmp }

**arc-over** [ELEC] An unwanted arc resulting from the opening of a switch or the breakdown of insulation. {'ār ,k ,ō-vər }

**arc resistance** [ELEC] 1. A measure of the durability of an insulating or dielectric material against the formation of conductive paths along the surface by arc discharges. 2. The ratio of the voltage that gives rise to an arc discharge to the current in the arc. {'ār ,rɪ ,zɪs-təns }

**arc-suppression coil** [ELEC] A grounding reactor, used in alternating-current power transmission systems, which is designed to limit the current flowing to ground at the location of a fault almost to zero by setting up a reactive current to ground that balances the capacitive current to ground flowing from the lines. Also known as Petersen coil. {'ār ,sə'preʃ-ən ,kɔɪl }

**arc-through** [ELECTR] Of a gas tube, a loss of control resulting in the flow of a principal electron stream in the normal direction during a scheduled nonconducting period. {'ār ,θruː }

**area** [COMPUT SCI] A section of a computer memory assigned by a computer program or by the hardware to hold data of a particular type. {'er-ē-ə }

**area code** [COMMUN] A three-digit prefix used in dialing long-distance telephone calls in the United States and Canada. {'er-ē-ə ,kɔd }

**area effect** [ELECTR] In general, the condition of the dielectric strength of a liquid or vacuum separating two electrodes being higher for electrodes of smaller area. {'er-ē-ə 'i:fekt }

**areal density** [COMPUT SCI] The amount of data that can be stored on a unit area of the surface of a hard disk, floppy disk, or other storage device. { ,er-ē-əl 'den-səd-ē }

**area search** [COMPUT SCI] A computer search that examines only those records which satisfy some broad criteria. {'er-ē-ə ,sɜ:tʃ }

**A register** See arithmetic register. {'ā ,rej-ə-stɔ:r }

**argument** [COMPUT SCI] A value applied to a procedure, subroutine, or macroinstruction which is required in order to evaluate any of these. {'ār-ɡy-ə-mənt }

**argument separator** [COMPUT SCI] A comma or other punctuation mark that separates successive arguments in a command or statement in a computer program. {'ār-ɡyü-mənt ,sep-ə ,rād-ər }

**arithmetic address** [COMPUT SCI] An address in a computer program that results from performing an arithmetic operation on another address. {'ā-rɪθ ,med-ɪk ə'dres }

**arithmetical element** See arithmetical unit. {'ā-rɪθ ,med-ə-kəl 'el-ə-mənt }

**arithmetical instruction** [COMPUT SCI] An instruction in a computer program that directs the computer to perform an arithmetical operation

(addition, subtraction, multiplication, or division) upon specified items of data. { 'a-rith | med-ə-kəl, in'strə-k-shən }

**arithmetical operation** [COMPUT SCI] A digital computer operation in which numerical quantities are added, subtracted, multiplied, divided, or compared. { 'a-rith | med-ə-kəl, əp-ə-rā-shən }

**arithmetical unit** [COMPUT SCI] The section of the computer which carries out all arithmetic and logic operations. Also known as arithmetical element; arithmetic-logic unit (ALU); arithmetic section; logic-arithmetic unit; logic section. { 'a-rith | med-ə-kəl 'yü-nət }

**arithmetic check** [COMPUT SCI] The verification of an arithmetical operation or series of operations by another such process; for example, the multiplication of 73 by 21 to check the result of multiplying 21 by 73. { ə'rith-mə,tik ,chek }

**arithmetic circuitry** [COMPUT SCI] The section of the computer circuitry which carries out the arithmetic operations. { 'a-rith | med-ik 'sər-ka-trē }

**arithmetic coding** [COMMUN] A method of data compression in which a long character string is represented by a single number whose value is obtained by repeatedly partitioning the range of possible values in proportion to the probabilities of the characters. { 'a-rith | med-ik 'cöd-ɪŋ }

**arithmetic-logic unit** See arithmetical unit. { ə'rith-mə,tik 'ləj-ik ,yü-nət }

**arithmetic processor** See numeric processor extension. { ə'rith-mə,tik ,präs,es-ər }

**arithmetic register** [COMPUT SCI] A specific memory location reserved for intermediate results of arithmetic operations. Also known as A register. { 'a-rith | med-ik 'rej-ə-stər }

**arithmetic scan** [COMPUT SCI] The procedure for examining arithmetic expressions and determining the order of execution of operators, in the process of compilation into machine-executable code of a program written in a higher-level language. { 'a-rith | med-ik ,skan }

**arithmetic section** See arithmetical unit. { 'a-rith | med-ik ,sek-shən }

**arithmetic shift** [COMPUT SCI] A shift of the digits of a number, expressed in a positional notation system, in the register without changing the sign of the number. { 'a-rith | med-ik 'shift }

**arithmetic symmetry** [ELECTR] Property of a band-pass or band-rejection filter whose graph of amplitude versus frequency is symmetrical around a center frequency; that is, the left-hand side of the response is a mirror image of the right-hand side. { 'a-rith | med-ik 'sim-ə-trē }

**arm** [CONT SYS] A robot component consisting of an interconnected set of links and powered joints that move and support the wrist socket and end effector. [ELEC] See branch. [ENG ACOUS] See tone arm. { ärm }

**armature contact** See movable contact. { 'är-mə ,chər 'kän,takt }

**armature resistance** [ELEC] The ohmic resistance in the main current-carrying windings of an electric generator or motor. { 'är-mə ,chər ri'ziz-təns }

**armor** [ELEC] Metal sheath enclosing a cable, primarily for mechanical protection. { 'är-mər }

**armored cable** [ELEC] An electrical cable provided with a sheath of metal primarily for mechanical protection. { 'är-mərd 'kä-bəl }

**arm solution** [CONT SYS] The computation performed by a robot controller to calculate the joint positions required to achieve desired tool positions. { 'ärm sə,lü-shən }

**Armstrong oscillator** [ELECTR] Inductive feedback oscillator that consists of a tuned-grid circuit and an untuned-tickler coil in the plate circuit; control of feedback is accomplished by varying the coupling between the tickler and the grid circuit. { 'ärm ,strɔŋ 'äs-ə,lä-d-ər }

**ARPA** See automated radar plotting aid. { 'är-pə }

**ARQ** See automatic repeat request.

**array** [COMPUT SCI] A collection of data items with each identified by a subscript or key and arranged in such a way that a computer can examine the collection and retrieve data from these items associated with a particular subscript or key. [ELECTR] A group of components such as antennas, reflectors, or directors arranged to provide a desired variation of radiation transmission or reception with direction. { ə'rä }

**array element** [COMPUT SCI] A single data item in an array. { ə'rä ,el-ə-mənt }

**array processor** [COMPUT SCI] A multiprocessor composed of a set of identical central processing units acting synchronously under the control of a common unit. { ə'rä 'präs,es-ər }

**array radar** [ENG] A radar incorporating a multiplicity of phased antenna elements. { ə'rä 'rä ,där }

**array sonar** [ENG] A sonar system incorporating a phased array of radiating and receiving transducers. { ə'rä 'sɔ,när }

**arrester** See lightning arrester. { ə'res-tər }

**ARSR** See air-route surveillance radar.

**articulation** [COMMUN] The percentage of speech units understood correctly by a listener in a communications system; it generally applies to unrelated words, as in code messages, in distinction to intelligibility. [CONT SYS] The manner and actions of joining components of a robot with connecting parts or links that allow motion. { ärtik-yə'lä-shən }

**articulation equivalent** [COMMUN] Of a complete telephone connection, a measure of the articulation of speech reproduced over it, expressed numerically in terms of the trunk loss of a working reference system when the latter is adjusted to give equal articulation. { ärtik-yə'lä-shən i'kwiv-ə-lənt }

**artifact** [COMMUN] Any component of a signal that is extraneous to the variable represented by the signal. { 'ärd-ə,fakt }

**artificial antenna** See dummy antenna. { 'ärd-ə 'fish-əl an'ten-ə }

**artificial atom** [ELECTR] A structure, typically 50–100 nanometers in diameter, that is fabricated in a semiconductor crystal and holds a small number of electrons which are trapped in a bowl-like potential well. { 'ärd-ə,fish-əl 'ad-əm }

## artificial crystal

- artificial crystal** See superlattice. { ʔɑrd-ə'fɪʃ-əl 'krɪst-əl }
- artificial delay line** See delay line. { ʔɑrd-ə'fɪʃ-əl di'lā ,lɪn }
- artificial ear** [ENG ACOUS] A device designed to duplicate the frequency response, acoustic impedance, threshold sensitivity, and relative perception of loudness, consisting of a special microphone enclosed in a box with properties similar to those of the human ear. { ʔɑrd-ə'fɪʃ-əl 'ɪr }
- artificial ground** [ELEC] A common correction for a radio-frequency electrical or electronic circuit that is not directly connected to the earth. { ʔɑrd-ə'fɪʃ-əl 'graʊnd }
- artificial intelligence** [COMPUT SCI] The property of a machine capable of reason by which it can learn functions normally associated with human intelligence. { ʔɑrd-ə'fɪʃ-əl ɪn'tel-ə-ʒəns }
- artificial ionization** [COMMUN] Introduction of an artificial reflecting or scattering layer into the atmosphere to permit beyond-the-horizon communications. { ʔɑrd-ə'fɪʃ-əl ,ɪ-ə-nə'zā-shən }
- artificial language** [COMPUT SCI] A computer language that is specifically designed to facilitate communication in a particular field, but is not yet natural to that field; opposite of a natural language, which evolves through long usage. { ʔɑrd-ə'fɪʃ-əl 'lɑŋ-ɡwɪj }
- artificial line** [ELEC] Circuit made up of lumped constants, which is used to simulate various characteristics of a transmission line. { ʔɑrd-ə'fɪʃ-əl 'lɪn }
- artificial line duct** [ELEC] Balancing network simulating the impedance of the real line and distant terminal apparatus, which is employed in a duplex circuit to make the receiving device unresponsive to outgoing signal currents. { ʔɑrd-ə'fɪʃ-əl 'lɪn ,dʌkt }
- artificial load** [ELEC] Dissipative but essentially nonradiating device having the impedance characteristics of an antenna, transmission line, or other practical utilization circuit. { ʔɑrd-ə'fɪʃ-əl 'lɒd }
- artificially layered structure** See superlattice. { ʔɑrd-ə'fɪʃ-əl-ē ʔlā-ərd 'stræk-ʃər }
- artificial radio aurora** [COMMUN] Modification of the ionosphere by high-power high-frequency radio transmitters to improve scatter and auroral long-distance communication. Also known as radio aurora. { ʔɑrd-ə'fɪʃ-əl 'ræd-ē,ō ə'rɔr-ə }
- artificial reality** See virtual reality. { ʔɑrd-ə'fɪʃ-əl rē'al-əd-ē }
- artificial voice** [ENG ACOUS] 1. Small loudspeaker mounted in a shaped baffle which is proportioned to simulate the acoustical constants of the human head; used for calibrating and testing close-talking microphones. 2. Synthetic speech produced by a multiple tone generator; used to produce a voice reply in some real-time computer applications. { ʔɑrd-ə'fɪʃ-əl 'vɔɪs }
- aS** See abmho.
- A-scan** See A-display. { 'ā ,skan }
- ascending sort** [COMPUT SCI] The arrangement of records or other data into a sequence running from the lowest to the highest in a specified field. { ə'send-ɪŋ 'sɔrt }
- ASCII** See American Standard Code for Information Interchange. { 'as,kē }
- ASCII file** [COMPUT SCI] A data or text file that contains only codes that constitute the 128-character ASCII set. { ʔas,kē 'fɪl }
- ASCII protocol** [COMMUN] A protocol for the simplest mode of transmitting ASCII data, with little or no error checking. { ʔas,kē 'prɒd-ə,kɒl }
- ASCII sort order** [COMPUT SCI] A sort order determined by the numbering of characters in the American Standard Code for Information Interchange. { ʔas,kē 'sɔrt ,ɔrd-ər }
- A-scope** See A-display. { 'ā skɒp }
- asdic** [ELECTR] British term for sonar and underwater listening devices. Derived from Anti-Submarine Detection Investigation Committee. { 'az,dɪk }
- ASIC** See application-specific integrated circuit. { 'ā,sɪk or ʔæsɪs'tɪ'sē }
- ASK** See amplitude shift keying.
- aspect ratio** [COMPUT SCI] In computer graphics, the ratio between the width and height of an image. [ENG] The ratio of frame width to frame height in television; in the United States and Britain it is 4:3 for standard television and 16:9 for high-definition television. { 'a,spekt ,rā-shō }
- assembler** [COMPUT SCI] A program designed to convert symbolic instruction into a form suitable for execution on a computer. Also known as assembly program; assembly routine. { ə'sem-blər }
- assembler directive** [COMPUT SCI] A statement in an assembly-language program that gives instructions to the assembler and does not generate machine language. { ə'sem-blər dɪ,rek-tɪv }
- assembler language** See assembly language. { ə'sem-blər ,lɑŋ-ɡwɪj }
- assembler program** [COMPUT SCI] A program that is written in assembly language. { ə'sem-blər ,prɒ-ɡrəm }
- assembly** [COMPUT SCI] The automatic translation into machine language of a computer program written in symbolic language. { ə'sem-blē }
- assembly language** [COMPUT SCI] A symbolic, nonbinary format for instructions (human-readable version of machine language) that allows mnemonic names to be used for instructions and data; for example, the instruction to add the number 39321 to the contents of register D1 in the central processing unit might be written as ADD#39321, D1 in assembly language, as opposed to a string of 0's and 1's in machine language. { ə'sem-blē ,lɑŋ-ɡwɪj }
- assembly list** [COMPUT SCI] A printed list which is the by-product of an assembly procedure; it lists

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in logical instruction sequence all details of a routine, showing the coded and symbolic notation next to the actual notations established by the assembly procedure; this listing is highly useful in the debugging of a routine. { ʔ'sem-blē, list }  
**assembly program** See assembler. { ʔ'sem-blē 'prō-gram }  
**assembly robot** [COMPUT SCI] A robot that positions, mates, fits, and assembles components or parts and adjusts the finished product to function as intended. { ʔ'sem-blē, rō, bāt }  
**assembly routine** See assembler. { ʔ'sem-blē rü'tēn }  
**assembly system** [COMPUT SCI] An automatic programming software system with a programming language and machine-language programs that aid the programmer by performing different functions such as checkout and updating. { ʔ'sem-blē, sis-təm }  
**assembly unit** [COMPUT SCI] 1. A device which performs the function of associating and joining several parts or piecing together a program. 2. A portion of a program which is capable of being assembled into a larger program. { ʔ'sem-blē, yü-nat }  
**assign** [COMPUT SCI] A control statement in FORTRAN which assigns a computed value *i* to a variable *k*, the latter representing the number of the statement to which control is then transferred. { ʔ'sīn }  
**assignment problem** [COMPUT SCI] A special case of the transportation problem in a linear program, in which the number of sources (assignees) equals the number of designations (assignments) and each supply and each demand equals 1. { ʔ'sīn-mənt 'prāb-ləm }  
**assignment statement** [COMPUT SCI] A statement in a computer program that assigns a value to a variable. { ʔ'sīn-mənt, stāt-mənt }  
**assisted panel** [COMPUT SCI] In an interactive system, a screen that explains a question the computer has asked, the available options, the expected format, and so forth. { ʔ'sis-təd 'pan-əl }  
**associated document** [COMPUT SCI] A file that is linked to the application program in which it was created, so that the application can be started by choosing such a file. { ʔ,sō-sē, ād-əd 'dāk-yə-mənt }  
**association trail** [COMPUT SCI] A linkage between two or more documents or items of information, discerned during the process of their examination and recorded with the aid of an information retrieval system. { ʔ,sō-sē 'ā-shən, trāl }  
**associative dimensioning system** [COMPUT SCI] A system for making automatic changes in the dimensions of workpieces manufactured by machine tools. { ʔ'sō-sē, ād-iv dī'men-shən-iŋ 'sis-təm }  
**associative key** [COMPUT SCI] In a computer system with an associative memory, a field used to reference items through comparing the value of the field with corresponding fields in each memory cell and retrieving the contents of matching cells. { ʔ'sō-sē, ād-iv 'kē }

**associative memory** [COMPUT SCI] A data-storage device in which a location is identified by its informational content rather than by names, addresses, or relative positions, and from which the data may be retrieved. Also known as associative storage. { ʔ'sō-sē, ād-iv 'mem-rē }  
**associative processor** [COMPUT SCI] A digital computer that consists of a content-addressable memory and means for searching rapidly changing random digital data stored within, at speeds up to 1000 times faster than conventional digital computers. { ʔ'sō-sē, ād-iv 'prās, es-ər }  
**associative storage** See associative memory. { ʔ'sō-sē, ād-iv 'stōr-ij }  
**associator** [COMPUT SCI] A device for bringing like entities into conjunction or juxtaposition. { ʔ'sō-sē, ād-ər }  
**assumed decimal point** [COMPUT SCI] For a decimal number stored in a computer or appearing on a printout, a position in the number at which place values change from positive to negative powers of 10, but to which no location is assigned or at which no printed character appears, as opposed to an actual decimal point. Also known as virtual decimal point. { ʔ'sūmd 'des-məl ,pōint }  
**astable circuit** [ELECTR] A circuit that alternates automatically and continuously between two unstable states at a frequency dependent on circuit constants; for example, a blocking oscillator. { 'ā'stā-bəl 'sər-kət }  
**astable multivibrator** [ELECTR] A multivibrator in which each active device alternately conducts and is cut off for intervals of time determined by circuit constants, without use of external triggers. Also known as free-running multivibrator. { 'ā'stā-bəl ,molt-i'vī,brād-ər }  
**astatic wattmeter** [ENG] An electrodynamic wattmeter designed to be insensitive to uniform external magnetic fields. { 'ā'stad-ik 'wät,mēd-ər }  
**A station** [NAV] In loran, the designation applied to one transmitting station of a pair, the signal of which always occurs less than half a repetition period after the preceding signal and more than half a repetition period before the succeeding signal of the other station, designated a B station. { 'ā'stā-shən }  
**astigmatism** [ELECTR] In an electron-beam tube, a focus defect in which electrons in different axial planes come to focus at different points. { ʔ'stig,mə,tiz-əm }  
**Aston dark space** [ELECTR] A dark region in a glow-discharge tube which extends for a few millimeters from the cathode up to the cathode glow. { 'as-tən 'därk ,spās }  
**astrionics** [ELECTR] The science of adapting electronics to aerospace flight. { ,as-trē'an-iks }  
**A supply** [ELECTR] Battery, transformer filament winding, or other voltage source that supplies power for heating filaments of vacuum tubes. Also known as A power supply. { 'ā sə,plī }  
**asymmetrical cell** [ELECTR] A cell, such as a photoelectric cell, in which the impedance to the flow of current in one direction is greater than in the other direction. { ;ā-sə'me-tri-kəl 'sel }



## asymmetrical conductivity

**asymmetrical conductivity** [ELEC] A variation in the conductivity of a conductor over its cross section that is not symmetric about the conductor's central axis. { |ä-sə'me-tri-kəl ,kän ,dsk'tiv-əd-ē }

**asymmetrical deflection** [ELECTR] A type of electrostatic deflection in which one deflector plate is maintained at a fixed potential and the deflecting voltage is supplied to the other plate. { |ä-sə'me-tri-kəl di'flek-shən }

**asymmetrical modem** [COMMUN] A modem that simultaneously transmits and receives data, but at different speeds. { ,ä-si'me-trə-kəl 'mō,dem }

**asymmetrical-sideband transmission** See vestigial-sideband transmission. { |ä-sə'me-tri-kəl 'sīd,bənd ,tranz'mish-ən }

**asymmetric digital subscriber line** [COMMUN] A broadband communication technology designed for use on conventional telephone lines, which reserves more bandwidth for receiving data than for sending data. Abbreviated ADSL. { |ä-sə'me-trik |dij-ə-dəl ,səb'skrīb-ər ,līn }

**asynchronous** [COMPUT SCI] Operating at a speed determined by the circuit functions rather than by timing signals. { ä'siŋ-kro-nəs }

**asynchronous communications** [COMMUN] The transmission and recognition of a single character at a time. { ä'siŋ-kro-nəs kə,myü-nə'kā-shənz }

**asynchronous communications adaptor** [COMPUT SCI] A device connected to a computer to allow it to carry out asynchronous communications over a telephone line. { ä'siŋ-kro-nəs kə,myü-nə'kā-shənz ə,dəp-tər }

**asynchronous computer** [COMPUT SCI] A computer in which the performance of any operation starts as a result of a signal that the previous operation has been completed, rather than on a signal from a master clock. { ä'siŋ-kro-nəs kəm'pyüd-ər }

**asynchronous control** [CONT SYS] A method of control in which the time allotted for performing an operation depends on the time actually required for the operation, rather than on a predetermined fraction of a fixed machine cycle. { ä'siŋ-kro-nəs kən'tröl }

**asynchronous data** [COMPUT SCI] Information which is sampled at irregular intervals with respect to another operation. { ä'siŋ-kro-nəs 'dād-ə }

**asynchronous device** [CONT SYS] A device in which the speed of operation is not related to any frequency in the system to which it is connected. { ä'siŋ-kro-nəs di'vīs }

**asynchronous digital subscriber loop** See asymmetric digital subscriber line. { ä'siŋ-kro-nəs 'dij-əd-əl səb'skrīb-ər ,lūp }

**asynchronous input/output** [COMPUT SCI] The ability to receive input data while simultaneously outputting data. { ä'siŋ-kro-nəs 'in,püt 'aüt,püt }

**asynchronous inputs** [ELECTR] The terminals in a flip-flop circuit which affect the output state of the flip-flop independently of the clock. { ä'siŋ-kro-nəs 'in,püts }

**asynchronous logic** [ELECTR] A logic network in which the speed of operation depends only on the signal propagation through the network. { ä'siŋ-kro-nəs 'lāj-ik }

**asynchronous machine** [ELEC] An ac machine whose speed is not proportional to the frequency of the power line. { ä'siŋ-kro-nəs mə'shən }

**asynchronous operation** [ELECTR] An operation that is started by a completion signal from a previous operation, proceeds at the maximum speed of the circuits until finished, and then generates its own completion signal. { ä'siŋ-kro-nəs ,äp-ə'rā-shən }

**asynchronous tie** [ELEC] An installation at which power is transmitted between two alternating-current power systems, operating at the same nominal frequency but with different frequency controls, by a direct-current link. { ä'siŋ-kro-nəs 'tī }

**asynchronous time-division multiplexing** [COMMUN] A data-transmission technique in which several users utilize a single channel by means of a system which assigns time slots only to active channels. { ä'siŋ-kro-nəs 'tīm də'vi-zhən 'mōlt-i ,pleks-ŋg }

**asynchronous transfer mode** [COMMUN] A high-speed packet-switching technology based on cell-oriented switching and multiplexing that uses 53-byte packets to transfer different types of information, such as voice, video, and data, over the same communications network at different speeds. Abbreviated ATM. { ,äsiŋ-kro-nəs 'tranz-fər ,mōd }

**asynchronous transmission** [COMMUN] Data transmission in which each character contains its own start and stop pulses and there is no control over the time between characters. { ä'siŋ-kro-nəs ,tranz'mish-ən }

**asynchronous working** [COMPUT SCI] The mode of operation of a computer in which an operation is performed only at the end of the preceding operation. { ä'siŋ-kro-nəs 'wərk-ŋg }

**asyndetic** [COMPUT SCI] 1. Omitting conjunctions or connectives. 2. Pertaining to a catalog without cross references. { |as-ən'ded-ik }

**ATCRBS** See air-traffic control radar beacon system.

**ATDM** See asynchronous time-division multiplexing.

**ATM** See asynchronous transfer mode; automatic teller machine.

**atmospheric attenuation** [GEOPHYS] The loss of radar or radio signals sent through earth's (or other) atmosphere due to the thermal agitation of various gas molecules as the electromagnetic wave passes through; oxygen and water vapor are the two most sensitive gases in the microwave region, with severity generally, but very linearly, increasing with frequency. { |at-mə'sfir-ik ə,ten-yə'wā-shən }

**atmospheric noise** [ELECTR] Noise heard during radio reception due to atmospheric interference. { |at-mə'sfir-ik 'nōiz }

**atmospheric radio wave** [ELECTROMAG] Radio wave that is propagated by reflection in the

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atmosphere, may include either the ionospheric wave or the tropospheric wave, or both. [ʃat-mə ʃsfr-ik 'rād-ē-ō ,wāv ]

**atom** [COMPUT SCI] A primitive data element in a data structure. [ 'ad-əm ]

**atomic fallout** See fallout. [ ə'tām-ik 'fōl,aut ]

**atomic operation** [COMPUT SCI] An operation that cannot be broken up into smaller parts that could be performed by different processors. [ ə'tām-ik ,əp-ə'rā-shən ]

**A trace** [ELECTR] The first trace of an oscilloscope, such as the upper trace of a loran indicator. [ 'ā ,trās ]

**ATR tube** See anti-transmit-receive tube. [ 'ā'tē ,ār,tüb ]

**attached processing** [COMPUT SCI] A method of data processing in which several relatively inexpensive computers dedicated to specific tasks are connected together to provide a greater processing capability. [ ə'tacht 'prās,es-iŋ ]

**attached processor** [COMPUT SCI] A computer that is electronically connected to and operates under the control of another computer. [ ə'tacht 'prās,es-ər ]

**attaching gas** [ELECTR] A gas in which electron attachment takes place. [ ə'tach-iŋ ,gas ]

**attachment** [COMPUT SCI] An additional file sent with an e-mail message. [ ə'tach-mənt ]

**attachment coefficient** [ELECTR] The probability that an electron drifting through a gas under the influence of a uniform electric field will undergo electron attachment in a unit distance of drift. [ ə'tach-mənt ,kō-ə ,fīsh-ənt ]

**attachment plug** [ELEC] A device having an attached flexible cord containing conductors, and capable of being inserted in a receptacle so as to form an electrical connection between the conductors in the cord and conductors permanently connected to the receptacle. [ ə'tach-mənt ,pləŋ ]

**attachment unit interface** [COMMUN] A 15-pin connector on an Ethernet card for connecting a network cable. Abbreviated AUI. [ ə'tach-mənt ,yü-nət 'in-tər,fās ]

**attack director** [COMPUT SCI] An electromechanical analog computer which is designed for surface antisubmarine use and which computes continuous solution of several lines of submarine attack; it is part of several antisubmarine fire control systems. [ ə'tak dī'rek-tər ]

**ATTC** See Advanced Television Technology Center.

**attendant's switchboard** [COMMUN] Switchboard of one or more positions in a central-office location which permits the central-office operator to receive, transmit, or cut in on a call to or from one of the lines which the office services. [ ə'ten-dəns 'swich,bórd ]

**attended time** [COMPUT SCI] The time in which a computer is either switched on and capable of normal operation (including time during which it is temporarily idle but still watched over by computer personnel) or out of service for maintenance work. [ ə'tend-əd ,tīm ]

**attenuate** [ENG ACOUS] To weaken a signal by reducing its level. [ ə'ten-yə,wāt ]

**attenuation** [ELEC] The exponential decrease with distance in the amplitude of an electrical signal traveling along a very long uniform transmission line, due to conductor and dielectric losses. [ ə'ten-yə'wā-shən ]

**attenuation constant** [PHYS] A rating for a line or medium through which a plane wave is being transmitted, equal to the relative rate of decrease of an amplitude of a field component, voltage, or current in the direction of propagation, in nepers per unit length. [ ə'ten-yə'wā-shən ,kän-stənt ]

**attenuation distortion** [COMMUN] 1. In a circuit or system, departure from uniform amplification or attenuation over the frequency range required for transmission. 2. The effect of such departure on a transmitted signal. [ ə'ten-yə'wā-shən dis ,tór-shən ]

**attenuation equalizer** [ELECTR] Corrective network which is designed to make the absolute value of the transfer impedance, with respect to two chosen pairs of terminals, substantially constant for all frequencies within a desired range. Also known as attenuation factor. [ ə'ten-yə 'wā-shən 'ē-kwə,līz-ər ]

**attenuation network** [ELECTR] Arrangement of circuit elements, usually impedance elements, inserted in circuitry to introduce a known loss or to reduce the impedance level without reflections. [ ə'ten-yə'wā-shən 'net,wərk ]

**attenuator** [ELECTR] An adjustable or fixed transducer for reducing the amplitude of a wave without introducing appreciable distortion. [ ə'ten-yə,wād-ər ]

**attracted-disk electrometer** [ELEC] A type of electrometer in which the attraction between two oppositely charged disks is measured. [ ə'trak-təd 'disk i ,lek'trám-əd-ər ]

**attraction gripper** [CONT SYS] A robot component that uses adhesion, suction, or magnetic forces to grasp a workpiece. [ ə'trak-shən ,grip-ər ]

**attribute** [COMPUT SCI] 1. A data item containing information about a variable. 2. A characteristic of computer-generated characters, such as underline, boldface, or reverse image. [ 'a-trə ,byüt ]

**audible feedback** [COMPUT SCI] A feature of a computer keyboard that generates sound each time a key is depressed sufficiently to generate a character on the screen. [ ,öd-ə-bəl 'fēd ,bak ]

**audio adapter** See sound board. [ ,öd-ē-ō ə'dap-tər ]

**audio amplifier** See audio-frequency amplifier. [ 'öd-ē-ō 'am-plə ,fī-ər ]

**audio-frequency amplifier** [ELECTR] An electronic circuit for amplification of signals within, and in some cases above, the audible range of frequencies in equipment used to record and reproduce sound. Also known as audio amplifier. [ 'öd-ē-ō 'frē-kwən-sē 'am-plə ,fī-ər ]

**audio-frequency meter** [ENG] One of a number of types of frequency meters usable in the audio range; for example, a resonant-reed frequency meter. [ 'öd-ē-ō 'frē-kwən-sē ,mēd-ər ]

## audio-frequency oscillator

- audio-frequency oscillator** [ELECTR] An oscillator circuit using an electron tube, transistor, or other nonrotating device to produce an audio-frequency alternating current. Also known as audio oscillator. { 'öd-ē-ō |frē-kwən-sē 'äs-ō |läd-ər }
- audio-frequency peak limiter** [ELEC] A circuit used in an audio-frequency system to cut off signal peaks that exceed a predetermined value. Also known as audio peak limiter. { 'öd-ē-ō |frē-kwən-sē 'pēk |lim-əd-ər }
- audio-frequency shift modulation** [COMMUN] System of facsimile transmission over radio, in which the frequency shift required is applied through a change in audio signal, rather than shifting the radio transmitter frequency; the radio signal is modulated by the shifting audio signal, usually at 1500 to 2300 hertz. { 'öd-ē-ō |frē-kwən-sē |shift māj-ə'lā-shən }
- audio-frequency transformer** [ELEC] An iron-core transformer that is used for coupling audio-frequency circuits. Also known as audio transformer. { 'öd-ē-ō |frē-kwən-sē tranz'fōr-mər }
- audio oscillator** See audio-frequency oscillator. { 'öd-ē-ō 'äs-ō-lä-d-ər }
- audio patch bay** [ENG ACOUS] Specific patch panels provided to terminate all audio circuits and equipment used in a channel and technical control facility; this equipment can also be found in transmitting and receiving stations. { 'öd-ē-ō |pach ,bā }
- audio peak limiter** See audio-frequency peak limiter. { 'öd-ē-ō 'pēk |lim-ə-dər }
- audio response** [COMMUN] A form of computer output in which prerecorded spoken syllables, words, or messages are selected and put together by a computer as the appropriate verbal response to a keyboarded inquiry on a time-shared on-line information system. { 'öd-ē-ō ri'spāns }
- audio response unit** [COMMUN] A system that provides voice response to an inquiry; the inquiry is typically made using the dual-tone multifrequency (DTMF) dial on a telephone set. { 'öd-ē-ō ri'spāns ,yü-nət }
- audio spectrometer** See acoustic spectrometer. { 'öd-ē-ō spek'träm-əd-ər }
- audio system** See sound-reproducing system. { 'öd-ē-ō ,sis-təm }
- audio taper** [ENG ACOUS] A special type of potentiometer used in a volume-control apparatus to compensate for the nonlinearity of human hearing and give the impression of a linear increase in audibility as volume is raised. Also known as linear taper. { 'öd-ē-ō ,tā-pər }
- audio transformer** See audio-frequency transformer. { 'öd-ē-ō tranz'fōr-mər }
- audiovisual** [COMMUN] Pertaining to methods of education and training that make use of both hearing and sight. { 'öd-ē-ō |vizh-ə-wəl }
- audiphone** [ENG ACOUS] A device that enables persons with certain types of deafness to hear, consisting of a plate or diaphragm that is placed against the teeth and transmits sound vibrations to the inner ear. { 'öd-ə ,fōn }
- audit** [COMPUT SCI] The operations developed to corroborate the evidence as regards authenticity and validity of the data that are introduced into the data-processing problem or system. { 'öd-ət }
- audit total** [COMPUT SCI] A count or sum of a known quantity, calculated in order to verify data. { 'öd-ət ,tōd-əl }
- audit trail** [COMPUT SCI] A system that provides a means for tracing items of data from processing step to step, particularly from a machine-produced report or other machine output back to the original source data. { 'öd-ət ,träl }
- augmented operation code** [COMPUT SCI] An operation code which is further defined by information from another portion of an instruction. { 'ög-men-təd əp-ə'rā-shən ,kōd }
- AUI** See attachment unit interface.
- aurallization** See virtual acoustics. { 'ör-əl-ə'zā-shən }
- aural radio range** [ELECTR] A radio-range station providing lines of position by virtue of aural identification or comparison of signals at the output of a receiver. { 'ör-əl 'rād-ē-ō ,rānj }
- aural transmitter** [COMMUN] Radio equipment used for transmitting aural (sound) signals from a television broadcast station. { 'ör-əl ,tranz'mid-ər }
- aurora** See corona discharge. { ə'rōr-ə }
- aurora gating** [ELECTR] Operator-controlled gating to eliminate undesirable radar returns from aurora. { ə'rōr-əl |gād-ij }
- auroral propagation** [COMMUN] The propagation of radio waves that are reflected from the aurora in the presence of unusual solar activity. { ə'rōr-əl ,prəp-ə'gā-shən }
- authentication** [COMMUN] Security measure designed to protect a communications system against fraudulent transmissions and establish the authenticity of a message. { ə'thent-ə'kā-shən }
- authenticator** [COMMUN] Letter, numeral, or groups of letters or numerals attesting to the authenticity of a message or transmission. { ə'thent-ə ,kād-ər }
- authoring language** [COMPUT SCI] A programming language designed to be convenient for authors of computer-based learning materials. { 'ö-thar-ij 'laj-gwij }
- authorization code** [COMPUT SCI] A password or identifying number that is used to gain access to a computer system. { ,öth-ə-rə'zā-shən ,kōd }
- authorized carrier frequency** [COMMUN] A specific carrier frequency authorized for use, from which the actual carrier frequency is permitted to deviate, solely because of frequency instability, by an amount not to exceed the frequency tolerance. { 'ö-thə ,rizd 'kar-ē-ər ,frē-kwən-sē }
- authorized library** [COMPUT SCI] A group of authorized programs. { 'ö-thə ,rizd 'li-brer-ē }
- authorized program** [COMPUT SCI] A computer program that can alter the fundamental operation or status of a computer system. { 'ö-thə ,rizd 'prō-gram }

**auto-abstract** [COMPUT SCI] 1. To select key words from a document, commonly by an automatic or machine method, for the purpose of forming an abstract of the document. 2. The material abstracted from a document by machine methods. { 'ôd-ô 'ab, strakt }

**autoadaptivity** [CONT SYS] The ability of an advanced robot to sense the environment, accept commands, and analyze and execute operations. { 'ôd-ô, a, dap'tiv-ad-ê }

**autoalarm** See automatic alarm receiver. { 'ôd-ô, a, larm }

**auto answer** [COMMUN] The feature of a modem that receives the telephone ring for an incoming call and accepts the call to establish a connection. { 'ôd-ô 'an-sər }

**auto bypass** [COMPUT SCI] The ability of a computer network to bypass a terminal or other device if it fails, allowing other devices connected to the network to continue operation. { 'ôd-ô 'bī, pas }

**autocall** [COMPUT SCI] The automatic placing of a telephone call by a computer or a computer-controlled modem. Also known as automatic call origination. { 'ôd-ô, kól }

**autocode** [COMPUT SCI] The process of using a computer to convert automatically a symbolic code into a machine code. Also known as automatic code. { 'ôd-ô, kôd }

**autocoder** [COMPUT SCI] A person or machine producing or using autocode as a part or the whole of a task. { 'ôd-ô, kôd-ər }

**autocorrelation** [ELECTR] A technique used to detect cyclic activity in a complex signal. { 'ôd-ô, kər-ə 'lā-shən }

**autocorrelator** [ELECTR] A correlator in which the input signal is delayed and multiplied by the undelayed signal, the product of which is then smoothed in a low-pass filter to give an approximate computation of the autocorrelation function; used to detect a nonperiodic signal or a weak periodic signal hidden in noise. { 'ôd-ô 'kär-ə, lād-ər }

**autodecrement addressing** [COMPUT SCI] An addressing mode of computers in which the register is first decremented and then used as a pointer. { 'ôd-ô 'dek-rə-mənt ə'dres-ij }

**auto dial** [COMMUN] The feature of a modem that automatically opens a telephone line and dials the telephone of a receiving computer to establish a connection. { 'ôd-ô 'dīl }

**autodyne circuit** [ELECTR] A circuit in which the same tube elements serve as oscillator and detector simultaneously. { 'ôd-ô, dīn, sər-kət }

**autodyne reception** [COMMUN] System of heterodyne reception through the use of a device which is both an oscillator and a detector. { 'ôd-ô, dīn ri'sep-shən }

**autoincrement addressing** [COMPUT SCI] An addressing mode of minicomputers in which the operand address is gotten from the specified register which is then incremented. { 'ôd-ô 'iŋ-krə-mənt ə'dres-ij }

**autoindexing** See automatic indexing. { 'ôd-ô 'in, deks-ij }

**automata theory** [MATH] A theory concerned with models used to simulate objects and processes such as computers, digital circuits, nervous systems, cellular growth and reproduction. { ô'tām-əd-ə 'thē-ə-rē }

**automated decision making** [COMPUT SCI] The use of computers to carry out tasks requiring the generation or selection of options. { 'ôd-ô, mād-əd dī'sizh-ən, māk-ij }

**automated guided vehicle system** [CONT SYS] A computer-controlled system that uses pallets and other interface equipment to transport workpieces to numerically controlled machine tools and other equipment in a flexible manufacturing system, moving in a predetermined pattern to ensure automatic, accurate, and rapid work-machine contact. { 'ôd-ô, mād-əd 'gīd-əd 'vē-ə-kəl, sis-təm }

**automated identification system** [COMPUT SCI] In a data processing system, the use of a technology such as bar coding, image recognition, or voice recognition instead of keyboarding for data entry. { 'ôd-ô, mād-əd ī, den-tə-fə'ka-shən, sis-təm }

**automated radar plotting aid** [NAV] A marine computer-based anticollision system that automatically processes time coordinates of radar echo signals into space coordinates in digital form, determines consecutive coordinates and motion parameters of targets, calculates the predicted closest point of approach and time to closest point of approach and presents them in graphic or alphanumeric form on the radar display, and switches on alarms if there is a danger of collision. { 'ôd-ô, mād-əd 'rā,dār 'plād-ij, əd }

**automated tape library** [COMPUT SCI] A computer storage system consisting of several thousand magnetic tapes and equipment under computer control which automatically brings the tapes from storage, mounts them on tape drives, dismounts the tapes when the job is completed, and returns them to storage. { 'ôd-ô, mād-əd 'tāp 'lī, brer-ē }

**automatic** [ENG] Having a self-acting mechanism that performs a required act at a predetermined time or in response to certain conditions. { 'ôd-ô; mad-ik }

**automatic abstracting** [COMPUT SCI] Techniques whereby, on the basis of statistical properties, a subset of the sentences in a document is selected as representative of the general content of that document. { 'ôd-ô; mad-ik 'ab, strakt-ij }

**automatic acceleration** See dynamic resolution. { 'ôd-ô; mad-ik ik, sel-ə 'rā-shən }

**automatic alarm receiver** [ELECTR] A complete receiving, selecting, and warning device capable of being actuated automatically by intercepted radio-frequency waves forming the international automatic alarm signal. Also known as autoalarm. { 'ôd-ô; mad-ik ə'larm ri, sē-var }

**automatic-alarm-signal keying device** [COMMUN] A device capable of automatically keying

## automatic back bias

the radiotelegraph transmitter on board a vessel to transmit the international automatic-alarm signal, or to respond to receipt of an internationally agreed-upon distress signal and wake up the radio operator on ships not having a 24-hour radio watch. { 'd-ə;mad-ik 'lārm ,sig-nəl 'kē-ig di,vīs }

**automatic back bias** [ELECTR] Radar technique which consists of one or more automatic gain control loops to prevent overloading of a receiver by large signals, whether jamming or actual radar echoes. { 'd-ə;mad-ik 'bak ,bī-əs }

**automatic background control** See automatic brightness control. { 'd-ə;mad-ik 'bak,graünd kən,tröl }

**automatic bass compensation** [ELECTR] A circuit related to the volume control in some radio receivers and audio amplifiers to make bass notes sound properly balanced, in the audio spectrum, at low volume-control settings. { 'd-ə;mad-ik 'bās kām-pən'sā-shən }

**automatic bias** [ELECTR] A method of obtaining the correct bias for a vacuum tube or transistor through use of a resistor, usually in the cathode or emitter circuit. { 'd-ə;mad-ik 'bī-əs }

**automatic brightness control** [ELECTR] A circuit used in an analog television receiver to keep the average brightness of the reproduced image essentially constant. Abbreviated ABC. Also known as automatic background control. { 'd-ə;mad-ik 'brīt-nəs kən,tröl }

**automatic calibration** [ENG] A process in which an electronic device automatically performs the recalibration of a measuring range of a weighing instrument, for example an electronic balance. { 'd-ə;mad-ik ,kal-ə'brā-shən }

**automatic calling unit** [COMPUT SCI] A device that enables a business machine or computer to automatically dial calls over a communications network. { 'd-ə;mad-ik 'köl-ig ,yü-nət }

**automatic call origination** See autocal. { 'd-ə;mad-ik 'köl ə,rij-ə'nā-shən }

**automatic carriage** [COMPUT SCI] Any mechanism designed to feed continuous paper or plastic forms through a printing or writing device, often using sprockets to engage holes in the paper. { 'd-ə;mad-ik 'kar-ij }

**automatic C bias** See self-bias. { 'd-ə;mad-ik 'sē ,bī-əs }

**automatic character recognition** [COMPUT SCI] The technology of using special machine systems to identify human-readable symbols, most often alphanumeric, and then to utilize this data. { 'd-ə;mad-ik 'kar-ik-tər ,rek-ig'nish-ən }

**automatic check** [COMPUT SCI] An error-detecting procedure performed by a computer as an integral part of the normal operation of a device, with no human attention required unless an error is actually detected. { 'd-ə;mad-ik 'chek }

**automatic check-out system** [CONT SYS] A system utilizing test equipment capable of automatically and simultaneously providing actions and information which will ultimately result in the efficient operation of tested equipment while

keeping time to a minimum. { 'd-ə;mad-ik 'chek,äüt ,sis-təm }

**automatic chroma control** See automatic color control. { 'd-ə;mad-ik 'kröm-ə kən,tröl }

**automatic chrominance control** See automatic color control. { 'd-ə;mad-ik 'kröm-ə-nəns kən,tröl }

**automatic code** See autocode. { 'd-ə;mad-ik 'köd }

**automatic coding** [COMPUT SCI] Any technique in which a computer is used to help bridge the gap between some intellectual and manual form of describing the steps to be followed in solving a given problem, and some final coding of the same problem for a given computer. { 'd-ə;mad-ik 'köd-ig }

**automatic color control** [ELECTR] A circuit used in an analog color television receiver to keep color intensity levels essentially constant despite variations in the strength of the received color signal; control is usually achieved by varying the gain of the chrominance band-pass amplifier. Also known as automatic chroma control; automatic chrominance control. { 'd-ə;mad-ik 'köl-ər kən,tröl }

**automatic computer** [COMPUT SCI] A computer which can carry out a special set of operations without human intervention. { 'd-ə;mad-ik kəm'pyüd-ər }

**automatic connection** [ELECTR] Ability of electronic switching equipment to make a connection between users without human intervention. { 'd-ə;mad-ik kə'nek-shən }

**automatic contrast control** [ELECTR] A circuit that varies the gain of the radio-frequency and video intermediate-frequency amplifiers in such a way that the contrast of the television picture is maintained at a constant average level. { 'd-ə;mad-ik 'kän,trast kən,tröl }

**automatic control** [CONT SYS] Control in which regulating and switching operations are performed automatically in response to predetermined conditions. Also known as automatic regulation. { 'd-ə;mad-ik kən,tröl }

**automatic-control block diagram** [CONT SYS] A diagrammatic representation of the mathematical relationships defining the flow of information and energy through the automatic control system, in which the components of the control system are represented as functional blocks in series and parallel arrangements according to their position in the actual control system. { 'd-ə;mad-ik kən'tröl 'bläk ,dī-ə ,gram }

**automatic-control error coefficient** [CONT SYS] Three numerical quantities that are used as a measure of the steady-state errors of an automatic control system when the system is subjected to constant, ramp, or parabolic inputs. { 'd-ə;mad-ik kən'tröl 'er-ər ,kō-ə'fish-ənt }

**automatic-control frequency response** [CONT SYS] The steady-state output of an automatic control system for sinusoidal inputs of varying frequency. { 'd-ə;mad-ik 'frē-kwən-sē ri ,spāns }

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**automatic controller** [CONT SYS] An instrument that continuously measures the value of a variable quantity or condition and then automatically acts on the controlled equipment to correct any deviation from a desired preset value. Also known as automatic regulator; controller. { 'd-ə'mad-ik kən'tröl-ər }

**automatic-control servo valve** [CONT SYS] A mechanically or electrically actuated servo valve controlling the direction and volume of fluid flow in a hydraulic automatic control system. { 'd-ə'mad-ik kən'tröl 'sə-rvō ,valv }

**automatic-control stability** [CONT SYS] The property of an automatic control system whose performance is such that the amplitude of transient oscillations decreases with time and the system reaches a steady state. { 'd-ə'mad-ik kən'tröl stə,bil-ə-dē }

**automatic control system** [CONT SYS] A control system having one or more automatic controllers connected in closed loops with one or more processes. Also known as regulating system. { 'd-ə'mad-ik kən'tröl ,sis-təm }

**automatic cutout** [ELEC] A device, usually operated by centrifugal force or by an electromagnet, that automatically shorts part of a circuit at a particular time. { 'd-ə'mad-ik 'kəd,əut }

**automatic data processing** [ENG] The machine performance, with little or no human assistance, of any of a variety of tasks involving informational data, examples include automatic and responsive reading, computation, writing, speaking, directing artillery, and the running of an entire factory. Abbreviated ADP. { 'd-ə'mad-ik 'dad-ə 'präs,əs-ij }

**automatic degausser** [ELECTR] An arrangement of degaussing coils mounted around a color television picture tube, combined with a circuit that energizes these coils only while the set is warming up; demagnetizes any parts of the receiver that have been affected by the magnetic field of the earth or of any nearby devices. { 'd-ə'mad-ik dē'gāūs-ər }

**automatic detection** [ELECTR] A computer-based process in radar wherein the receiver's output video is examined, compared to appropriate thresholds and contacts (detections) reported; augments or replaces the similar role played by the human operator viewing an analog display of the video in more elementary radar. { 'd-ə'mad-ik dī'tek-shən }

**automatic dialer** [ELECTR] A device in which a telephone number up to some maximum number of digits can be stored in a memory and then activated, directly into the line, by the caller's pressing a button. { 'd-ə'mad-ik 'dīl-ər }

**automatic dictionary** [COMPUT SCI] Any table within a computer memory which establishes a one-to-one correspondence between two sets of characters. { 'd-ə'mad-ik 'dik-shə,nər-ē }

**automatic direction finder** [ELECTR] A direction finder that without manual manipulation indicates the direction of arrival of a radio signal. Abbreviated ADF. Also known as radio compass. { 'd-ə'mad-ik dī'rek-shən ,find-ər }

**automatic error correction** [COMMUN] A technique, usually requiring the use of special codes or automatic retransmission, which detects and corrects errors occurring in transmission; the degree of correction depends upon coding and equipment configuration. { 'd-ə'mad-ik 'er-ər kə'rek-shən }

**automatic exchange** [ELECTR] A telephone, teletypewriter, or data-transmission exchange in which communication between subscribers is effected, without the intervention of an operator, by devices set in operation by the originating subscriber's instrument (for example, the dial on a telephone). Also known as automatic switching system; machine switching system. { 'd-ə'mad-ik 'iks'chənj }

**automatic fine-tuning control** [ELECTR] A circuit used in a color television receiver to maintain the correct oscillator frequency in the tuner for best reception by compensating for drift and incorrect tuning. { 'd-ə'mad-ik ,fin 'tūn-ij kən'tröl }

**automatic frequency control** [ELECTR] Abbreviated AFC. **1.** A circuit used to maintain the frequency of an oscillator within specified limits, as in a transmitter. **2.** A circuit used to keep a superheterodyne receiver tuned accurately to a given frequency by controlling its local oscillator, as in an FM receiver. **3.** A circuit used in radar superheterodyne receivers to vary the local oscillator frequency so as to compensate for changes in the frequency of the received echo signal. **4.** A circuit used in television receivers to make the frequency of a sweep oscillator correspond to the frequency of the synchronizing pulses in the received signal. { 'd-ə'mad-ik 'frē-kwən-sē kən'tröl }

**automatic gain control** [ELECTR] A control circuit that automatically changes the gain (amplification) of a receiver or other piece of equipment so that the desired output signal remains essentially constant despite variations in input signal strength. Abbreviated AGC. { 'd-ə'mad-ik 'gān kən'tröl }

**automatic grid bias** See self-bias. { 'd-ə'mad-ik 'grīd ,bī-əs }

**automatic head parking** [COMPUT SCI] A feature that moves the read/write head of a hard disk over the landing zone whenever power is shut off to ensure against a head crash. { 'd-ə'mad-ik 'hed ,pārk-ij }

**automatic indexing** [COMPUT SCI] Selection of key words from a document by computer for use as index entries. Also known as autoindexing. [CONT SYS] The procedure for determining the orientation and position of a workpiece with respect to an automatically controlled machine, such as a robot manipulator, that is to perform an operation on it. { 'd-ə'mad-ik 'in ,deks-ij }

**automatic intercept** [COMMUN] Telephone service that automatically records messages a caller may leave when the called party is away from his telephone. This may be an answering machine or a function provided by an automatic exchange. { 'd-ə'mad-ik 'in-tər,sept }

## automatic interrupt

**automatic interrupt** [COMPUT SCI] Interruption of a computer program brought about by a hardware device or executive program acting as a result of some event which has occurred independently of the interrupted program. { 'd-ə'mad-ik 'in-tə ,rɒt }

**automatic level compensation** [COMMUN] System which automatically compensates for amplitude variations in a circuit. { 'd-ə'mad-ik 'lev-əl ,kəm-pen'sā-shən }

**automatic level control** [ELECTR] A circuit that keeps the output of a radio transmitter, tape recorder, or other device essentially constant, even in the presence of large changes in the input amplitude. Abbreviated ALC. { 'd-ə'mad-ik 'lev-əl kən, trɒl }

**automatic light control** [ELECTR] Automatic adjustment of illumination reaching a film, television camera, or other imaging device as a function of scene brightness. { 'd-ə'mad-ik 'lit kən, trɒl }

**automatic mathematical translator** [COMPUT SCI] An automatic-programming computer capable of receiving a mathematical equation from a remote input and returning an immediate solution. { 'd-ə'mad-ik ,math-ə'mad-ə-kəl 'tranz ,lād-ər }

**automatic message accounting** [COMMUN] System whereby toll calls are automatically recorded and timed. { 'd-ə'mad-ik 'mes-ij ə,kaunt-ɪŋ }

**automatic message-switching center** [COMMUN] A center in which messages are automatically routed according to information in them. { 'd-ə'mad-ik 'mes-ij ,swɪtʃ-ɪŋ ,sen-tər }

**automatic modulation control** [ELECTR] A transmitter circuit that reduces the gain for excessively strong audio input signals without affecting the strength of normal signals, thereby permitting higher average modulation without overmodulation. Abbreviated AMC. { 'd-ə'mad-ik ,mäj-ə'lā-shən kən, trɒl }

**automatic modulation limiting** [COMMUN] A circuit that prevents overmodulation in some citizen-band radio transmitters by reducing the gain of one or more audio amplifier stages when the voice signal becomes stronger. Abbreviated AML. { 'd-ə'mad-ik məj-ə'lā-shən ,lim-əd-ɪŋ }

**automatic noise limiter** [ELECTR] A circuit that clips impulse and static noise peaks, and sets the level of limiting or clipping according to the strength of the incoming signal, so that the desired signal is not affected. Abbreviated ANL. { 'd-ə'mad-ik 'nɔɪz ,lim-əd-ər }

**automatic peak limiter** See limiter. { 'd-ə'mad-ik 'pɛk ,lim-əd-ər }

**automatic phase control** [ELECTR] 1. A circuit used in color television receivers to reinsert a 3.58-megahertz carrier signal with exactly the correct phase and frequency by synchronizing it with the transmitted color-burst signal. 2. An automatic frequency-control circuit in which the difference between two frequency sources is fed to a phase detector that produces the required control signal. Abbreviated APC. { 'd-ə'mad-ik 'fāz kən, trɒl }

**automatic picture control** [ELECTR] A multiple-contact switch used in some color television receivers to disconnect one or more of the regular controls and make connections to corresponding preset controls. { 'd-ə'mad-ik 'pɪk-ʃər kən ,trɒl }

**automatic picture-transmission system** [ELECTR] A system in which a meteorological satellite continuously scans and transmits a view of a transverse swath directly beneath it; transmissions can be recorded by simple ground equipment to reconstruct an image of the cloud patterns within a thousand kilometers of the ground station. Abbreviated APT system. { 'd-ə'mad-ik 'pɪk-ʃər tranz'mɪʃ-ən ,sɪs-təm }

**automatic programming** [COMPUT SCI] The preparation of machine-language instructions by use of a computer. { 'd-ə'mad-ik 'prɒ,grəm-ɪŋ }

**Automatic Programming Tool** [COMPUT SCI] A computer language used to program numerically controlled machine tools. Abbreviated APT. { 'd-ə'mad-ik 'prɒ,grəm-ɪŋ ,tʊl }

**automatic regulation** See automatic control. { 'd-ə'mad-ik ,reg-yə'lā-shən }

**automatic regulator** See automatic controller. { 'd-ə'mad-ik 'reg-yə,lād-ər }

**automatic relay** [COMMUN] Means of selective switching which causes automatic equipment to record and retransmit communications. { 'd-ə'mad-ik 'rɛ,lā }

**automatic repeat request** [COMPUT SCI] A request from a receiving device to retransmit the most recent block of data. Abbreviated ARO. { 'd-ə'mad-ik rɪ'pɛt rɪ,kwest }

**automatic routine** [COMPUT SCI] A routine that is executed independently of manual operations, but only if certain conditions occur within a program or record, or during some other process. { 'd-ə'mad-ik rʊ'tɪn }

**automatic scanning receiver** [ELECTR] A receiver which can automatically and continuously sweep across a preselected frequency, either to stop when a signal is found or to plot signal occupancy within the frequency spectrum being swept. { 'd-ə'mad-ik 'skan-ɪŋ rɪ,sɛ-vər }

**automatic sensitivity control** [ELECTR] Circuit used for automatically maintaining receiver sensitivity at a predetermined level; it is similar to automatic gain control, but it affects the receiver constantly rather than during the brief interval selected by the range gate. { 'd-ə'mad-ik sen-sə'tɪv-əd-ē kən, trɒl }

**automatic sequences** [COMPUT SCI] The characteristic of a computer that can perform successive operations without human intervention. { 'd-ə'mad-ik 'sɛ-kwən-səs }

**automatic short-circuiter** [ELEC] Device designed to automatically short-circuit the commutator bars in some forms of single-phase commutator motors. { 'd-ə'mad-ik ,ʃɔrt 'sɔr-kəd-ər }

**automatic shutdown** [COMPUT SCI] A procedure whereby a network or computer system stops work in an orderly fashion with as little data loss and other damage as possible when the system's software determines that it has encountered

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**automatic speed sensing** [COMPUT SCI] The capability of a modem to automatically determine the maximum rate of data transfer over a connection. { 'd-ə,mad-ik 'sped ,sen-siŋ }

**automatic stop** [COMPUT SCI] An automatic halting of a computer processing operation as the result of an error detected by built-in checking devices. { 'd-ə,mad-ik 'stap }

**automatic switchboard** [COMMUN] Telephone switchboard in which the connections are made by using remotely controlled switches. { 'd-ə ,mad-ik 'swich,bord }

**automatic switching system** See automatic exchange. { 'd-ə,mad-ik 'swich-iŋ ,sis-təm }

**automatic teller machine** [COMPUT SCI] A banking terminal that is activated by inserting a magnetic card containing the user's account number, and that accepts deposits, dispenses cash, provides information about current balances, and may perform other services such as making payments and transfers and providing account statements. Abbreviated ATM. { 'd-ə,mad-ik 'tel-ər mə ,shən }

**automatic threshold variation** [ELECTR] Constant false-alarm rate scheme that is an open-loop of automatic gain control in which the decision threshold is varied continuously in proportion to the incoming intermediate frequency and video noise level. { 'd-ə,mad-ik 'thresh,höld ,ver-ē'ā-shən }

**automatic time switch** [ENG] Combination of a switch with an electric or spring-wound clock, arranged to turn an apparatus on and off at predetermined times. { 'd-ə,mad-ik ,līm ,swich }

**automatic tint control** [ELECTR] A circuit used in color television receivers to maintain correct flesh tones by correcting phase errors before the chroma signal is demodulated. { 'd-ə,mad-ik 'tint kən,tröl }

**automatic tracking** [ELECTR] A computer-based process in radar wherein successive contacts (detections) are associated and tracks of targets are estimated and updated with further observations. [NAV] 1. Tracking in which a servomechanism automatically follows some characteristic of the signal; specifically, a process by which tracking or data-acquisition systems are enabled to keep their antennas continuously directed at a moving target without manual operation. 2. An instrument which displays the actual course made good through the use of navigation derived from several sources. { 'd-ə,mad-ik 'trak-iŋ }

**automatic track shift** [ENG ACOUS] A system used with multiple-track magnetic tape recorders to index the tape head, after one track is played, to the correct position for the start of the next track. { 'd-ə,mad-ik 'trak ,shift }

**automatic transfer equipment** [ELEC] Equipment which automatically transfers a load so that a source of power may be selected from one of several incoming lines. { 'd-ə,mad-ik 'tranz,fər i,kwip-mənt }

**automatic tuning system** [CONT SYS] An electrical, mechanical, or electromechanical system that tunes a radio receiver or transmitter automatically to a predetermined frequency when a button or lever is pressed, a knob turned, or a telephone-type dial operated. { 'd-ə,mad-ik 'tün-iŋ ,sis-təm }

**automatic video noise leveling** [ELECTR] Constant false-alarm rate scheme in which the video noise level at the output of the receiver is sampled at the end of each range sweep and the receiver gain is readjusted accordingly to maintain a constant video noise level at the output. { 'd-ə,mad-ik |vid-ē-ó 'nóiz ,lev-əl-iŋ }

**automatic voltage regulator** See voltage regulator. { 'd-ə,mad-ik 'vol-tij ,reg-yə,lād-ər }

**automatic volume compressor** See volume compressor. { 'd-ə,mad-ik 'völ-yəm kəm,pres-ər }

**automatic volume control** [ELECTR] An automatic gain control that keeps the output volume of a radio receiver essentially constant despite variations in input-signal strength during fading or when tuning from station to station. Abbreviated AVC. { 'd-ə,mad-ik 'völ-yəm kən,tröl }

**automatic volume expander** See volume expander. { 'd-ə,mad-ik 'völ-yəm ik,spand-ər }

**automation** [ENG] 1. The use of technology to ease human labor or extend the mental or physical capabilities of humans. 2. The mechanisms, machines, and systems that save or eliminate labor, or imitate actions typically associated with human beings. { ,d-ə'mā-shən }

**automaton** [COMPUT SCI] A robot which functions without step-by-step guidance by a human operator. { ,d-ə'tām-ə,tən }

**automechanism** [CONT SYS] A machine or other device that operates automatically or under control of a servomechanism. { 'd-ə'mek-ə ,niz-əm }

**automonitor** [COMPUT SCI] A computer program used in debugging which instructs a computer to make a record of its own operations. { 'd-ə ,mān-əd-ər }

**automotive alternator** [ELEC] An ac generator used in an automotive vehicle to provide current for the vehicle's electrical systems. { 'd-ə ,mōd-iv 'öl-tə,nād-ər }

**automotive voltage regulator** [ELEC] A device in the automotive electrical system to prevent generator or alternator overvoltage. { 'd-ə'mōd-iv 'völ-tij ,reg-yə,lād-ər }

**autonomous channel operation** [COMPUT SCI] The rapid transfer of data between computer peripherals and the main store in which an entire block of data is transferred, word by word; the cycles of storage time for the word transfer are stolen from those available to the central processing unit. { ,d-ə'tān-ə-məs 'chan-əl ,äp-ə'rā-shən }

**autonomous robot** [ENG] A robot that not only can maintain its own stability as it moves, but also can plan its movements. { ,d-ə'tān-ə-məs 'rō ,bät }

**autonomous vehicle** [ENG] A vehicle that is able to plan its path and to execute its plan



## autopatch

without human intervention. { 0'tän-ə-məs 'vë-ə-kəl }

**autopatch** [ELECTR] A device for connecting radio transceivers to telephone lines by remote control, generally through the use of repeaters. { '0d-0,pach }

**autoplotter** [COMPUT SCI] A machine which automatically draws a graph from input data. { '0d-0 ,pläd-ər }

**autopolarity** [ELECTR] Automatic interchanging of connections to a digital meter when polarity is wrong; a minus sign appears ahead of the value on the digital display if the reading is negative. { ,0d-0-p0'lär-əd-ë }

**autostability** [CONT SYS] The ability of a device (such as a servomechanism) to hold a steady position, either by virtue of its shape and proportions, or by control by a servomechanism. { '0d-0-stä'bil-əd-ë }

**autostarter** [ELEC] 1. Automatic starting and switchover generating system consisting of a standby generator coupled to the station load through an automatic power transfer control unit. 2. See autotransformer starter. { '0d-0 ,stärd-ər }

**autostart routine** [COMPUT SCI] A set of instructions that is permanently stored in a computer memory and activated when the computer is turned on, to perform diagnostic tests and then load the operating system. { '0d-0,stärt rü,tën }

**autotest program** [COMPUT SCI] A computer program within the operating system that aids in testing and debugging programs. { '0d-0,tést 'prö-gräm }

**autotrace** [COMPUT SCI] A routine that locates outlines of raster graphics images and transforms them into vector graphics, usually at higher resolution. { '0d-0,träs }

**autotransformer** [ELEC] A power transformer having one continuous winding that is tapped; part of the winding serves as the primary and all of it serves as the secondary, or vice versa, small autotransformers are used to start motors. { '0d-0-tranz|fór-mər }

**autotransformer starter** [ELEC] Motor starter having an autotransformer to furnish a reduced voltage for starting; includes the necessary switching mechanism. Also known as autostarter. { '0d-0-tranz|fór-mər ,stärd-ər }

**auxiliary channel** [COMMUN] A secondary path for low-speed communication that uses the same circuit as a higher-speed stream of data. { 0g'zil-yə-rë 'chan-əl }

**auxiliary contacts** [ELEC] Contacts, in a switching device, in addition to the main circuit contacts, which function with the movement of the latter. { 0g'zil-yə-rë 'kän,taks }

**auxiliary equipment** See off-line equipment. { 0g'zil-yə-rë ə'kwip-mənt }

**auxiliary instruction buffer** [COMPUT SCI] A section of storage in the instruction unit, 16 bytes in length, used to hold prefetched instructions. { 0g'zil-yə-rë in'stræk-shən ,bäf-ər }

**auxiliary memory** [COMPUT SCI] 1. A high-speed memory that is in a large main frame or

supercomputer, is not directly addressable by the central processing unit, and is connected to the main memory by a high-speed data channel. 2. See auxiliary storage. { 0g'zil-yə-rë 'mem-rë }

**auxiliary operation** [COMPUT SCI] An operation performed by equipment not under continuous control of the central processing unit of a computer. { 0g'zil-yə-rë ,äp-ə'rä-shən }

**auxiliary processor** [COMPUT SCI] Any equipment which performs an auxiliary operation in a computer. { 0g'zil-yə-rë 'präs,es-ər }

**auxiliary relay** [ELEC] Relay that operates in response to the opening or closing of its operating circuit to assist another relay or device in performing a function. { 0g'zil-yə-rë 'rë,lä }

**auxiliary routine** [COMPUT SCI] A routine designed to assist in the operation of the computer and in debugging other routines. { 0g'zil-yə-rë rü'tën }

**auxiliary storage** [COMPUT SCI] Storage device in addition to the main storage of a computer; for example, magnetic tape, magnetic or optical disk, or magnetic drum. Also known as auxiliary memory. { 0g'zil-yə-rë 'st0r-ij }

**auxiliary switch** [ELEC] A switch actuated by the main device (such as a circuit breaker) for signaling, interlocking, or other purposes. { 0g'zil-yə-rë 'swich }

**av** See avvolt.

**availability** [COMPUT SCI] Of data, data channels, and input-output devices in computers, the condition of being ready for use and not immediately committed to other tasks. { ə,väl-ə'bil-ə-dë }

**available line** [ELECTR] Portion of the length of the scanning line which can be used specifically for picture signals in a facsimile system. { ə'väl-ə-bəl 'līn }

**available power** [ELECTR] The power which a linear source of energy is capable of delivering into its conjugate impedance. { ə'väl-ə-bəl 'pau-ər }

**available-power gain** [ELECTR] Ratio, in an electronic transducer, of the available power from the output terminals of the transducer, under specified input termination conditions, to the available power from the driving generator. { ə'väl-ə-bəl 'pau-ər ,gän }

**available space list** [COMPUT SCI] A pool of inactive memory cells, available for use in a list-processing system, to which cells containing items deleted from data lists are added, and from which cells needed for newly inserted data items are removed. { ə'väl-ə-bəl 'späs ,list }

**available time** See up time. { ə'väl-ə-bəl 'tīm }

**avalanche** [ELECTR] 1. The cumulative process in which an electron or other charged particle accelerated by a strong electric field collides with and ionizes gas molecules, thereby releasing new electrons which in turn have more collisions, so that the discharge is thus self-maintained. Also known as avalanche effect; cascade; cumulative ionization; electron avalanche; Townsend avalanche; Townsend ionization. 2. Cumulative multiplication of carriers in a semiconductor as a result of avalanche breakdown. Also known as avalanche effect. { 'äv-ə,lanch }

**avalanche breakdown** [ELECTR] Nondestructive breakdown in a semiconductor diode when the electric field across the barrier region is strong enough so that current carriers collide with valence electrons to produce ionization and cumulative multiplication of carriers. { 'av-ə ,lanch 'brāk,daün }

**avalanche diode** [ELECTR] A semiconductor breakdown diode, usually made of silicon, in which avalanche breakdown occurs across the entire *p-n* junction and voltage drop is then essentially constant and independent of current; the two most important types are IMPATT and TRAPATT diodes. { 'av-ə,lanch 'dī,ōd }

**avalanche effect** See avalanche. { 'av-ə,lanch i ,fekt }

**avalanche impedance** [ELECTR] The complex ratio of the reverse voltage of a device that undergoes avalanche breakdown to the reverse current. { 'av-ə,lanch im'pēd-əns }

**avalanche-induced migration** [ELECTR] A technique of forming interconnections in a field-programmable logic array by applying appropriate voltages for shorting selected base-emitter junctions. { 'av-ə,lanch in'düsd ,mī'grā-shən }

**avalanche noise** [ELECTR] 1. A junction phenomenon in a semiconductor in which carriers in a high-voltage gradient develop sufficient energy to dislodge additional carriers through physical impact; this agitation creates ragged current flows which are indicated by noise. 2. The noise produced when a junction diode is operated at the onset of avalanche breakdown. { 'av-ə,lanch ,nōiz }

**avalanche oscillator** [ELECTR] An oscillator that uses an avalanche diode as a negative resistance to achieve one-step conversion from direct-current to microwave outputs in the gigahertz range. { 'av-ə,lanch 'ās-ə,lād-ər }

**avalanche photodiode** [ELECTR] A photodiode operated in the avalanche breakdown region to achieve internal photocurrent multiplication, thereby providing rapid light-controlled switching operation. { 'av-ə,lanch ,fōd-ō'dī,ōd }

**avalanche transistor** [ELECTR] A transistor that utilizes avalanche breakdown to produce chain generation of charge-carrying hole-electron pairs. { 'av-ə,lanch tran'zīs-tər }

**avalanche voltage** [ELECTR] The reverse voltage required to cause avalanche breakdown in a *p-n* semiconductor junction. { 'av-ə,lanch ,vōl-tij }

**avatar** [COMPUT SCI] A virtual representation of a person or a person's interactions with others in a virtual environment, conveying a sense of someone's presence (known as telepresence) by providing the location (position and orientation) and identity; examples include the graphical human figure model, the talking head, and the real-time reproduction of a three-dimensional human image. { 'av-ə,tār }

**AVC** See automatic volume control.

**av/cm** See abvolt per centimeter.

**average acoustic output** [ENG ACOUS] Vibratory energy output of a transducer measured by a radiation pressure balance; expressed in terms

of watts per unit area of the transducer face, { 'av-rīj ə'kū-stīk 'aüt,püt }

**average-calculating operation** [COMPUT SCI] A common or typical calculating operation longer than an addition and shorter than a multiplication; often taken as the mean of nine additions and one multiplication. { 'av-rīj 'käl-kyə,lād-īj ,äp-ə,rā-shən }

**average-edge line** [COMPUT SCI] The imaginary line which traces or smooths the shape of any written or printed character to be recognized by a computer through optical, magnetic, or other means. { 'av-rīj ,ej ,līn }

**average effectiveness level** See effectiveness level. { 'av-rīj i'fēk-tiv-nəs ,lev-əl }

**average information content** [COMMUN] The average of the information content per symbol emitted from a source. { 'av-rīj ,in-fər'mā-shən ,kän-tent }

**average noise figure** [ELECTR] Ratio in a transducer of total output noise power to the portion thereof attributable to thermal noise in the input termination, the total noise being summed over frequencies from zero to infinity, and the noise temperature of the input termination being standard (290 K). { 'av-rīj 'nōiz ,fig-yər }

**average power output** [ELECTR] Radio-frequency power, in an audio-modulation transmitter, delivered to the transmitter output terminals, averaged over a modulation cycle. { 'av-rīj 'pau-ər 'aüt,püt }

**averaging** [CONT SYS] The reduction of noise received by a robot sensor by screening it over a period of time. { 'av- rīj-īj }

**avigation** See air navigation. { ,ə-və'gā-shən }

**avionics** [ENG] The design and production of airborne electrical and electronic devices; term is derived from aviation electronics. { ,ā-vē'än-īks }

**AWGN** See additive white Gaussian noise.

**axial lead** [ELEC] A wire lead extending from the end along the axis of a resistor, capacitor, or other component. { 'ak-sē-əl 'lēd }

**axial ratio** [ELECTR] The ratio of the major axis to the minor axis of the polarization ellipse of a waveguide. Also known as ellipticity. { 'ak-sē-əl 'rā-shō }

**Ayrton-Jones balance** [ELEC] A type of balance with which force between current-carrying conductors is measured; uses single-layer solenoids as the fixed and movable coils. { 'er-tən ||ōnz 'bal-əns }

**Ayrton-Perry winding** [ELEC] Winding of two wires in parallel but opposite directions to give better cancellation of magnetic fields than is obtained with a single winding. { 'er-tən 'per-ē ,wind-īj }

**Ayrton shunt** [ELEC] A shunt used to increase the range of a galvanometer without changing the damping. Also known as universal shunt. { 'er-tən ,shant }

**azel display** [ELECTR] Modified type of plan position indicator presentation showing two separate radar displays on one cathode-ray screen; one display presents bearing information and the other shows elevation. { 'azel dis,plā }

## azimuth

**azimuth** [ELECTR] Horizontal direction on the earth's surface, as represented by a radar plan position indicator. ('az-ə-məθ)

**azimuth alignment** [ENG ACOUS] The condition whereby the center lines of the playback- and recording-head gaps are exactly perpendicular to the magnetic tape and parallel to each other. ('az-ə-məθ a'līn-mənt)

**azimuth blanking** [ELECTR] Blanking (disabling) either the radar receiver or transmitter or both in selected azimuth regions, to reduce interference or lessen radiation hazards. ('az-ə-məθ ,blæŋk-ŋ)

**azimuth error** [ENG] An error in the indicated azimuth of a target detected by radar. ('az-ə-məθ ,er-ər)

**azimuth gain reduction** [ELECTR] Technique which allows control of the radar receiver system throughout any two azimuth sectors. ('az-ə-məθ 'gān rī,dək-shən)

**azimuth gating** [ELECTR] The practice of selectively brightening and enhancing the gain-desired sectors of a radar plan position indicator display, usually by applying a step waveform to the automatic gain control circuit, or similar data separation by sectors in more automated systems. ('az-ə-məθ ,gād-ŋ)

**azimuth indicator** [ENG] An approach-radar scope which displays azimuth information. ('az-ə-məθ ,in-də,kād-ər)

**azimuth marker** [ELECTR] On a radar plan position indicator, a bright rotatable radial line used for bearing determination. Also known as angle marker, bearing marker. ('az-ə-məθ ,mār-kər)

**azimuth resolution** [ELECTROMAG] Angle or distance by which two targets must be separated in azimuth to be distinguished by a radar set, when the targets are at the same range. ('az-ə-məθ ,rez-ə'lū-shən)

**azimuth-stabilized plan position indicator** [ENG] A north-upward plan position indicator (PPI), a radarscope, which is stabilized by a gyrocompass so that either true or magnetic north is always at the top of the scope regardless of vehicle orientation. ('az-ə-məθ ,sta-bə,līzd 'plan pə'zish-ən 'in-də,kād-ər)

**azimuth versus amplitude** [ELECTR] Electronic protection technique using a plan position indicator to display strobes due to jamming sources, particularly useful in making passive fixes when two or more radar sites operate together. ('az-ə-məθ ,vər-səs 'am-plə,tüd)

**Azusa** [ENG] A continuous-wave, high-accuracy, phase-comparison, single-station tracking system operating at C-band and giving two direction cosines and slant range which can be used to determine space position and velocity of a vehicle (usually a rocket or a missile). ('ə'zūs-ə)

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**babble** [COMMUN] **1.** Aggregate crosstalk from a large number of channels. **2.** Unwanted disturbing sounds in a carrier or other multiple-channel system which result from the aggregate crosstalk or mutual interference from other channels. { 'bæ-bəl }

**babs** See blind approach beacon system. { 'bæbz }

**baby spot** [ELEC] A small spotlight, usually equipped with a hood, used (as in the theater) to concentrate light on an area or an object a small distance from the spotlight. { 'bæ-bē 'spɔt }

**back bias** [ELECTR] **1.** Degenerative or regenerative voltage which is fed back to circuits before its originating point; usually applied to a control anode of a tube or other device. **2.** Voltage applied to a grid of a tube (or tubes) or electrode of another device to reduce a condition which has been upset by some external cause. { 'bæk 'bi:əs }

**backbone** [COMPUT SCI] The portion of a communication network that handles the largest volume of traffic, usually employing a high-speed, high-capacity medium designed to transmit data over long distances. { 'bæk,bəʊn }

**back contact** [ELEC] Normally closed stationary contact on a relay that is opened when the relay is energized. { 'bæk 'kɒntækt }

**back diode** [ELECTR] A special type of tunnel diode operated at low levels of reverse bias at which the device has negative resistance. { 'bæk 'di:əd }

**back echo** [ELECTROMAG] An echo signal produced on a radar screen by one of the minor back lobes of a search radar beam. { 'bæk 'ek-ə }

**back-echo reflection** [ELECTR] A radar echo produced by radiation reflected to the target by a large, fixed obstruction; that is, the ray path is from the antenna to obstruction to target and back similarly, giving a false indication of target position; an indirect-path echo. { 'bæk 'ek-ə rɪ'flek-shən }

**back-emission electron radiography** [ELECTR] A technique used in microradiography to visualize, among other things, the presence of material of different atomic numbers in the surface of the specimen being observed; the polished side of the specimen is facing and in close contact with the emulsion side of a fine-grain photographic plate; a light-tight cover holds the

specimen and plate in place to be subjected to hardened x-rays. { 'bæk i'mɪʃ-ən i'flek'trən 'ræd-ē'æg-rə-fē }

**back-end system** [COMPUT SCI] A computer that operates on data which have been previously processed by another computer system. { 'bæk 'end 'sɪs-təm }

**backfire** See arcback. { 'bæk,fɪr }

**backfire antenna** [ELECTROMAG] An antenna which exhibits significant gain in a direction 180° from its principal lobe. { 'bæk,fɪr an'ten-ə }

**backflow preventer** See vacuum breaker. { 'bæk 'fləʊ pri'ven-tər }

**background** [COMMUN] **1.** Picture white of the facsimile copy being scanned when the picture is black and white only. **2.** Undesired printing in the recorded facsimile copy of the picture being transmitted, resulting in shading of the background area. **3.** Noise heard during radio reception caused by atmospheric interference or the operation of the receiver at such high gain that inherent circuit noises become noticeable. { 'bæk,graʊnd }

**background discrimination** [ENG] The ability of a measuring instrument, circuit, or other device to distinguish signal from background noise. { 'bæk,graʊnd dɪs,krɪm-ə'næ-shən }

**background ink** [COMPUT SCI] In optical character recognition, a highly reflective ink used to print the parts of a document that are to be ignored by the scanner. { 'bæk,graʊnd ,ɪŋk }

**background noise** [ENG] The undesired signals that are always present in an electronic or other system, independent of whether or not the desired signal is present. { 'bæk,graʊnd ,nɔɪz }

**background processing** [COMPUT SCI] **1.** The execution of lower-priority programs when higher-priority programs are not being handled by a data-processing system. **2.** Computer processing that is not interactive or visible on the display screen. { 'bæk,graʊnd 'prɒ-ses-ɪŋ }

**background program** [COMPUT SCI] A computer program that has low priority in a multiprogramming system. { 'bæk,graʊnd 'prɒ-gram }

**background reflectance** [COMPUT SCI] The reflectance, relative to a standard, of the surface on which a printed or handwritten character has been inscribed in optical character recognition. { 'bæk,graʊnd rɪ'flek-təns }

## background returns

**background returns** [ENG] 1. Signals on a radar screen from objects which are of no interest. 2. See clutter. { 'bak,graünd ri'tərnz }

**backhaul** [COMMUN] Point-to-point satellite transmission of video from a remote site to a network distribution center in real time. { 'bak,həl }

**backing** [ELECTR] Flexible material, usually cellulose acetate or polyester, used on magnetic tape as the carrier for the oxide coating. { 'bak-iŋ }

**backing storage** [COMPUT SCI] A computer storage device whose capacity is larger, but whose access time is slower, than that of the computer's main storage or immediate access storage; usually slower than main storage. Also known as bulk storage. { 'bak-iŋ ,stɔr-iŋ }

**backlash** [ELECTR] A small reverse current in a rectifier tube caused by the motion of positive ions produced in the gas by the impact of thermoelectrons. { 'bak,laʃ }

**backlit display** [ELECTR] An electronic display that incorporates a light source in back of a liquid-crystal or other electronic display to increase readability, especially in daylight. { 'bak ,lit di'splā }

**back lobe** [ELECTROMAG] The three-dimensional portion of the radiation pattern of a directional antenna that is directed away from the intended direction. { 'bak ,ləb }

**backout** [COMPUT SCI] To remove a change that was previously made in a computer program. { 'bak,aʊt }

**backplane** [ELECTR] A wiring board, usually constructed as a printed circuit, used in computers to provide the required connections between logic, memory, input/output modules, and other printed circuit boards which plug into it at right angles. { 'bak,plān }

**backplate lamp holder** [ENG] A lamp holder, integrally mounted on a plate, which is designed for screwing to a flat surface. { 'bak ,plāt 'lɑmp ,həʊl-dər }

**back porch** [ELECTR] The period of time in a television circuit immediately following a synchronizing pulse during which the signal is held at the instantaneous amplitude corresponding to a black area in the received picture. { 'bak ,pɔrʃ }

**back radiation** See backscattering. { 'bak ,ræd-ē'shən }

**back resistance** [ELECTR] The resistance between the contacts opposing the inverse current of a metallic rectifier. { 'bak ri'sis-təns }

**backscatter gage** [ENG] A radar instrument used to measure the radiation scattered at 180° to the direction of the incident wave. { 'bak ,skad-ər ,gɑːʒ }

**backscattering** [COMMUN] Propagation of extraneous signals by F- or E-region reflection in addition to the desired ionospheric scatter mode; the undesired signal enters the antenna through the back lobes. [ELECTROMAG] 1. Radar echoes from a target. 2. Undesired radiation of energy to the rear by a directional antenna. 3. Also known as back radiation; backward scattering. { 'bak ,skad-ər-iŋ }

**back solution** [CONT SYS] The calculation of the tool-coordinated positions that correspond to specified robotic joint positions. { 'bak sɔ ,li:ʃən }

**backspace** [COMPUT SCI] To move a recording medium one unit in the reverse or background direction. { 'bak,spās }

**back-surface field** [ELECTR] A  $p^+$  layer that is added to a silicon solar cell to reduce electron-hole recombination at the cell's back surface and thereby increase the cell's efficiency. { 'bak ,sɔr-fəs ,fi:ld }

**backtalk** [COMPUT SCI] Passage of information from a standby computer to the active computer. { 'bak,tɔk }

**backtracking** [COMPUT SCI] A method of solving problems automatically by a systematic search of the possible solutions; the invalid solutions are eliminated and are not retried. { 'bak ,trak-iŋ }

**backup** [COMPUT SCI] 1. Logical or physical facilities to aid the process of restarting a computer system and recovering the information in it following a failure. 2. The provision of such facilities. { 'bak,əp }

**backup arrangement** See cascade. { 'bak,əp ,ə'rænʒ-mənt }

**backup relay** [ELEC] A relay designed to protect a power system in case a primary relay fails to operate as desired. { 'bak,əp 'rē-lā }

**backup system** [SYS ENG] A system, normally redundant but kept available to replace a system which may fail in operation. { 'bak,əp ,sis-təm }

**Backus-Naur form** [COMPUT SCI] A metalanguage that specifies sequences of symbols constitute a syntactically valid program language. Abbreviated BNF. { 'bæk-əs ,naʊr ,fɔrm }

**backward-acting regulator** [ELECTR] Transmission regulator in which the adjustment made by the regulator affects the quantity which caused the adjustment. { 'bak-wɔrd 'ak-tiŋ 'reg-ya,ləd-ər }

**backward chaining** [COMPUT SCI] In artificial intelligence, a method of reasoning which starts with the problem to be solved and repeatedly breaks this goal into subgoals that are more readily solvable with the relevant data and the system's rules of inference. { 'bak-wɔrd 'chän-iŋ }

**backward compatibility** See downward compatibility. { 'bak-wɔrd kəm ,pad-ə'bil-əd-ē }

**backward diode** [ELECTR] A semiconductor diode similar to a tunnel diode except that it has no forward tunnel current; used as a low-voltage rectifier. { 'bak-wɔrd 'di,əd }

**backward error analysis** [COMPUT SCI] A form of error analysis which seeks to replace all errors made in the course of solving a problem by an equivalent perturbation of the original problem. { 'bak-wɔrd 'er-ər ə ,nal-ə'səs }

**backward read** [COMPUT SCI] The transfer of data from a magnetic tape to computer storage when the tape is running in reverse. { 'bak-wɔrd 'rēd }

**backward scattering** See backscattering. { 'bak-wɔrd ,skad-ər-iŋ }

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**backward search** [COMPUT SCI] A search of a document or database that starts at the cursor's location and moves backwards toward the beginning of the document or database. { |'bak-wərd 'sɑ:ʃ }  
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**backward wave** [ELECTROMAG] An electromagnetic wave traveling opposite to the direction of motion of some other physical quantity in an electronic device such as a traveling-wave tube or mismatched transmission line. { 'bak-wərd ,wæv }

**backward-wave magnetron** [ELECTR] A magnetron in which the electron beam travels in a direction opposite to the flow of the radio-frequency energy. { 'bak-wərd ,wæv 'mæg-nə ,trɒn }

**backward-wave oscillator** [ELECTR] An electronic device which amplifies microwave signals simultaneously over a wide band of frequencies and in which the traveling wave produced is reflected backward so as to sustain the wave oscillations. Abbreviated BWO. Also known as carcinotron. { 'bak-wərd ,wæv 'ɔ:ʃ-ə ,lɑ:d-ər }

**backward-wave tube** [ELECTR] A type of microwave traveling-wave electron tube in which electromagnetic energy on a slow-wave circuit flows opposite in direction to the travel of electrons in a beam. { 'bak-wərd ,wæv ,tüb }

**bad branch** [COMPUT SCI] An error in which execution of a computer program jumps to an incorrect instruction, usually as a result of errors in the program. { |'bad 'brɑ:ʃ }

**bad page break** [COMPUT SCI] A soft page break at an inappropriate location in a document, such as one that splits a table or leaves a single line of text at the top or bottom of a page. { |'bad 'pɑ:ʃ ,bræk }

**bad sector** [COMPUT SCI] An area of disk storage that does not record data reliably and therefore is not used. { ,|'bad 'sek-tər }

**bad track** [COMPUT SCI] A disk track that contains a bad sector. { ,|'bad 'træk }

**bad track table** [COMPUT SCI] A listing of the bad sectors on a disk, which is packaged with or attached to a disk. { |'bad 'træk ,tā-bəl }

**baffle** [ELEC] Device for deflecting oil or gas in a circuit breaker. [ELECTR] An auxiliary member in a gas tube used, for example, to control the flow of mercury particles or deionize the mercury following conduction. [ENG] A plate that regulates the flow of a fluid, as in a steam-boiler flue or a gasoline muffler. [ENG ACOUS] A cabinet or partition used with a loudspeaker to reduce interaction between sound waves produced simultaneously by the two surfaces of the diaphragm. { 'baf-əl }

**balance** [ELEC] The state of an electrical network when it is adjusted so that voltage in one branch induces or causes no current in another branch. [ENG] An instrument for measuring mass or weight. { 'bal-əns }

**balance coil** [ELEC] An iron-core solenoid with adjustable taps near the center; used to convert a two-wire circuit to a three-wire circuit, the taps furnishing a neutral terminal for the latter. { 'bal-əns ,kɔ:ɪl }

**balance control** [ELECTR] A control used in a stereo sound system to vary the volume of one loudspeaker system relative to the other while maintaining their combined volume essentially constant. { 'bal-əns kən'trɒl }

**balanced amplifier** [ELECTR] An electronic amplifier in which there are two identical signal branches connected so as to operate with the inputs in phase opposition and with the output connections in phase, each balanced to ground. { 'bal-ənst 'am-pli-faɪ-ər }

**balanced armature unit** [ENG ACOUS] Driving unit used in magnetic loudspeakers, consisting of an iron armature pivoted between the poles of a permanent magnet and surrounded by coils carrying the audio-frequency current; variations in audio-frequency current cause corresponding changes in armature magnetism and corresponding movements of the armature with respect to the poles of the permanent magnet. { 'bal-ənst 'ɑ:rm-ə-ʧər ,ju-nət }

**balanced bridge** [ELEC] Wheatstone bridge circuit which, when in a quiescent state, has an output voltage of zero. { 'bal-ənst 'brɪdʒ }

**balanced circuit** [ELEC] 1. A circuit whose two sides are electrically alike and symmetrical with respect to a common reference point, usually ground. 2. An electric circuit that has been adjusted to neutralize the mutual induction of an adjacent circuit. { 'bal-ənst 'sər-kət }

**balanced converter** See balun. { 'bal-ənst kən 'vɜ:d-ər }

**balanced currents** [ELEC] Currents flowing in the two conductors of a balanced line which, at every point along the line, are equal in magnitude and opposite in direction. Also known as push-pull currents. { 'bal-ənst 'kərə-əns }

**balanced detector** [ELECTR] A detector used in frequency-modulation receivers; in one form the audio output is the rectified difference between voltages produced across two resonant circuits, one being tuned slightly above the carrier frequency and one slightly below. { 'bal-ənst dɪ'tek-tər }

**balanced input** [ELECTR] A symmetrical input circuit having equal impedance from both input terminals to reference. { 'bal-ənst ;in,pʊt }

**balanced line** [ELEC] A transmission line consisting of two conductors capable of being operated so that the voltages of the two conductors at any transverse plane are equal in magnitude and opposite in polarity with respect to ground. { 'bal-ənst ,li:n }

## balanced load

**balanced load** [ELEC] A load that presents the same impedance, with respect to ground, at both ends or terminals. { 'bal-ənst 'lɒd }

**balanced merge** [COMPUT SCI] A merge or sort operation in which the data involved are divided equally between the available storage devices. { 'bal-ənst 'mɜːj }

**balanced method** [ENG] Method of measurement in which the reading is taken at zero; it may be a visual or audible reading, and in the latter case the null is the no-sound setting. { 'bal-ənst 'meth-əd }

**balanced modulator** [ELECTR] A modulator in which the carrier and modulating signal are introduced in such a way that the output contains the two sidebands without the carrier. { 'bal-ənst 'məʊləd-ər }

**balanced network** [ELEC] Hybrid network in which the impedances of the opposite branches are equal. { 'bal-ənst 'net,wɜːk }

**balanced oscillator** [ELECTR] Any oscillator in which, at the oscillator frequency, the impedance centers of the tank circuits are at ground potential, and the voltages between either end and their centers are equal in magnitude and opposite in phase. { 'bal-ənst 'ɒs-ə,ləd-ər }

**balanced output** [ELECTR] A three-conductor output (as from an amplifier) in which the signal voltage alternates above and below a third, neutral wire. { 'bal-ənst 'aʊt,pʊt }

**balanced ring modulator** [ELECTR] A modulator that uses tubes or diodes to suppress the carrier signal while providing double-sideband output. { 'bal-ənst 'rɪŋ ,məʊləd-ər }

**balanced set** [ELECTR] Two or more components, such as tubes or transistors, connected in parallel or push-pull configuration, that have been chosen on the basis of identical, or nearly identical, gain and load characteristics. { 'bal-ənst ,set }

**balanced transmission line** [ELEC] Transmission line having equal conductor resistances per unit length and equal impedances from each conductor to earth and to other electrical circuits. { 'bal-ənst tranz'mɪʃ-ən ,lɪn }

**balanced-tree** [COMPUT SCI] A system of indexes that keeps track of stored data, and in which data keys are stored in a hierarchy that is continually modified in order to minimize access times. Abbreviated B-tree. { 'bal-ənst 'triː }

**balanced voltages** [ELEC] Voltages that are equal in magnitude and opposite in polarity with respect to ground. Also known as push-pull voltages. { 'bal-ənst ,vɒl-tɪʒ-əz }

**balanced wire circuit** [ELEC] Circuit wherein the two sides are electrically alike and symmetrical with respect to ground and other conductors. { 'bal-ənst 'waɪr ,sɜːkt-ət }

**balance error** [COMPUT SCI] An error voltage that arises at the output of analog adders in an analog computer and is directly proportional to the drift error. { 'bal-əns ,er-ər }

**balance method** See null method. { 'bal-əns ,meth-əd }

**balancer** [ELEC] A mechanism for equalizing the loads on the outer lines of a three-wire system for electric power distribution, consisting of two similar shunt or compound machines which are coupled together with the armatures connected in series across the outer lines. { 'bal-ən-sər }

**balancer set** [ELEC] Two coupled direct-current generators or motors that are used to equalize the voltage on each side of a three-wire system. { 'bal-ən-sər ,set }

**balance-to-unbalance transformer** [ELEC] Device for matching a pair of lines, balanced with respect to earth, to a pair of lines not balanced with respect to earth. { 'bal-əns tʊ 'ʌn,bal-əns tranz'fɔːm-ər }

**balancing** [COMPUT SCI] The distribution of workload among computing resources to optimize performance. { 'bal-əns-ɪŋ }

**balancing capacitor** [ELECTR] A variable capacitor used to improve the accuracy of a radio direction finder. Also known as compensating capacitor. { 'bal-əns-ɪŋ kə'pæs-əd-ər }

**balancing unit** [ELEC] 1. Antenna-matching device used to permit efficient coupling of a transmitter or receiver having an unbalanced output circuit to an antenna having a balanced transmission line. 2. Device for converting balanced to unbalanced transmission lines, and vice versa, by placing suitable discontinuities at the junction between the lines instead of using lumped components. { 'bal-əns-ɪŋ ,yʊ-nɪt }

**ballast** [ELEC] A circuit element that serves to limit an electric current or to provide a starting voltage, as in certain types of lamps, such as in fluorescent ceiling fixtures. { 'bal-əst }

**ballast factor** [ELEC] The ratio of the luminous output of a lamp when operated on a ballast to its luminous output when operated under standardized rating conditions. { 'bal-əst ,fak-tər }

**ballast lamp** [ELEC] A light-producing electrical resistance device which maintains nearly constant current by increasing in resistance as the current increases. { 'bal-əst ,læmp }

**ballast reactor** [ELEC] A coil wound on an iron core and connected in series with a fluorescent lamp to compensate for the negative-resistance characteristics of the lamp by providing an increased voltage drop as the current through the lamp is increased. { 'bal-əst rē'ak-tər }

**ballast resistor** [ELEC] A resistor that increases in resistance as current through it increases, and decreases in resistance as current decreases. Also known as barretter (British usage). { 'bal-əst rɪ'sɪs-tər }

**ballast tube** [ELEC] A ballast resistor mounted in an evacuated glass or metal envelope, like that of a vacuum tube, to reduce radiation of heat from the resistance element and thereby improve the voltage-regulating action. { 'bal-əst ,tʊb }

**ball bonding** [ENG] The making of electrical connections in which a flame is used to cut a wire, the molten end of which solidifies as a ball, which is pressed against the bonding pad on an integrated circuit. { 'bɒl ,bænd-ɪŋ }

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**ballistic galvanometer** [ELEC] A galvanometer having a long period of swing so that the deflection may measure the electric charge in a current pulse or the time integral of a voltage pulse. {bə'lis-tik ,gal-və'näm-əd-ər }

**ballistic magnetometer** [ENG] A magnetometer designed to employ the transient voltage induced in a coil when either the magnetized sample or coil are moved relative to each other. {bə'lis-tik ,mag-nə'täm-əd-ər }

**ballistic tracking** See dynamic resolution. {bə'lis-tik 'trak-ig }

**ballistic transport** [ELECTR] The passage of electrons through a semiconductor whose length is less than the mean free path of electrons in the semiconductor, so that most of the electrons pass through the semiconductor without scattering. {bə'lis-tik 'tranz,pört }

**ballistic vehicle** [ENG] A nonlifting vehicle; a vehicle that follows a ballistic trajectory. {bə'lis-tik 'vê-ə-kəl }

**balun** [ELEC] A device used for matching an unbalanced coaxial transmission line or system to a balanced two-wire line or system. Also known as balanced converter; bazooka; line-balance converter. {'ba,lən }

**banana jack** [ELEC] A jack that fits a banana plug; generally designed for panel mounting. {bə'næn-ə ,jak }

**banana plug** [ELEC] A plug having a spring-metal tip shaped like a banana and used on test leads or as terminals for plug-in components. {bə'næn-ə ,pləg }

**band** [COMMUN] A range of electromagnetic-wave frequencies between definite limits, such as that assigned to a particular type of radio service. [COMPUT SCI] A set of circular or cyclic recording tracks on a storage device such as a magnetic drum, disk, or tape loop. {band }

**bandage** [ELEC] Rubber ribbon about 4 inches (10 centimeters) wide for temporarily protecting a telephone or coaxial splice from moisture. {'ban-dij }

**band-elimination filter** See band-stop filter. {band ,līm-ə'nā-shən 'fil-tər }

**band-pass** [ELECTR] A range, in hertz or kilohertz, expressing the difference between the limiting frequencies at which a desired fraction (usually half power) of the maximum output is obtained. {'band ,pas }

**band-pass amplifier** [ELECTR] An amplifier designed to pass a definite band of frequencies with essentially uniform response. {'band ,pas 'am-plā,fī-ər }

**band-pass filter** [ELECTR] An electric filter which transmits more or less uniformly in a certain band, outside of which the frequency components are attenuated. {'band ,pas ,fil-tər }

**band-pass response** [ELECTR] Response characteristics in which a definite band of frequencies is transmitted uniformly. Also known as flat-top response. {'band ,pas ri'spāns }

**band-pass system** [ENG ACOUS] A loudspeaker system, often used for subwoofers, in which the

speaker is mounted inside an enclosure on a shelf that divides the enclosure into two parts, and one or both parts are coupled to the outside by a vent; the frequency response of the system is that of a fourth-order band-pass filter (one vent) or an asymmetrical sixth-order band-pass filter (two vents). {'band ,pas ,sis-təm }

**band printer** [COMPUT SCI] A line printer that uses a band of type characters as its printing mechanism. {'band 'print-ər }

**band-rejection filter** See band-stop filter. {'band ri'jek-shən ,fil-tər }

**band selector** [ELECTR] A switch that selects any of the bands in which a receiver, signal generator, or transmitter is designed to operate and usually has two or more sections to make the required changes in all tuning circuits simultaneously. Also known as band switch. {'band sə'lek-tər }

**band spreading** [COMMUN] Method of double-sideband transmission in which the frequency band of the modulating wave is shifted upward in frequency so that the sidebands produced by modulation are separated in frequency from the carrier by an amount at least equal to the bandwidth of the original modulating wave, and second-order distortion products may be filtered from the demodulator output. {'band ,spred-ig }

**band-spread tuning control** [ELECTR] A tuning control provided on some shortwave receivers to spread the stations in a single band of frequencies over an entire tuning dial. {'band ,spred 'tūn-ig kən'trōl }

**band-stop filter** [ELECTR] An electric filter which transmits more or less uniformly at all frequencies of interest except for a band within which frequency components are largely attenuated. Also known as band-elimination filter; band-rejection filter. {'band ,stɔp ,fil-tər }

**band switch** See band selector. {'band ,switʃ }

**bandwidth** [COMMUN] 1. The difference between the frequency limits of a band containing the useful frequency components of a signal. 2. A measure of the amount of data that can travel a communications path in a given time, usually expressed as thousands of bits per second (kbps) or millions of bits per second (Mbps). {'band ,width }

**bang-bang circuit** [ELECTR] An operational amplifier with double feedback limiters that drive a high-speed relay (1-2 milliseconds) in an analog computer; involved in signal-controlled programming. {'baŋ ,baŋ ,sər-kət }

**bang-bang control** [COMPUT SCI] Control of programming in an analog computer through a bang-bang circuit. [CONT SYS] A type of automatic control system in which the applied control signals assume either their maximum or minimum values. {'baŋ ,baŋ kən'trōl }

**bang-bang-off control** See bang-zero-bang control. {'baŋ ,baŋ 'ɔf kən'trōl }

**bang-bang robot** [CONT SYS] A simple robot that can make only two types of motions. {'baŋ ,baŋ 'rō,bät }



## bang-zero-bang control

**bang-zero-bang control** [CONT SYS] A type of control in which the control values are at their maximum, zero, or minimum. Also known as bang-bang-off control. ( 'bæg ,zir-ð 'bæg kən ,trɔ:l )

**bank** [ELEC] 1. A number of similar electrical devices, such as resistors, connected together for use as a single device. 2. An assemblage of fixed contacts over which one or more wipers or brushes move in order to establish electrical connections in automatic switching. ( 'bæŋk )

**bank-and-wiper switch** [ELEC] Switch in which electromagnetic ratchets or other mechanisms are used, first, to move the wipers to a desired group of terminals, and second, to move the wipers over the terminals of the group to the desired bank contacts. ( 'bæŋk ən 'wi:pə ,switʃ )

**banked winding** [ELECTR] A radio-frequency coil winding which proceeds from one end of the coil to the other without return by having, side by side, many flat spirals formed by winding single turns one over the other, thereby reducing the distributed capacitance of the coil. ( 'bæŋkt 'wɪnd-ɪŋ )

**bank select** [COMPUT SCI] To activate and deactivate blocks of memory or other internal system components using electronic control signals. Also known as bank switch. ( 'bæŋk si,lekt )

**bank selected memory** [COMPUT SCI] Auxiliary blocks of memory in a microcomputer that can be switched in to replace some or all of the internal memory by software-controlled switches located outside the microprocessor. ( 'bæŋk si,lekt-təd 'mem-rē )

**bank switch** See bank select. ( 'bæŋk ,switʃ )

**bantam tube** [ELECTR] Vacuum tube having a standard octal base, but a considerably smaller glass tube than a standard glass tube. ( 'bæntəm ,tʌb )

**bar code** [COMPUT SCI] The representation of alphanumeric characters by series of adjacent stripes of various widths, for example, the universal product code. ( 'bār ,kɔd )

**bar-code reader** See bar-code scanner. ( 'bār ,kɔd 'rēd-ər )

**bar-code scanner** [COMPUT SCI] An optical scanning device that reads texts which have been converted into a special bar code. Also known as bar-code reader. ( 'bār ,kɔd 'skan-ər )

**bare board** [ELECTR] A printed circuit board with conductors but no electronic components. ( 'ber 'bɔrd )

**bare disk** [ELECTR] A floppy-disk drive without electronic control circuits. ( 'ber 'disk )

**bar generator** [ELECTR] Generator of pulses or repeating waveforms that are equally separated in time; these pulses are synchronized by the synchronizing pulses of a television system, so that they can produce a stationary bar pattern on a television screen. ( 'bār ,jen-ə ,rād-er )

**BARITT diode** See barrier injection transit-time diode. ( 'bār-ət ,dī,ɔd )

**barium fuel cell** [ELEC] A fuel cell in which barium is used with either oxygen or chlorine to

convert chemical energy into electrical energy. ( 'bār-ē-əm 'fyū ,sel )

**Barkhausen criterion** [ELECTR] A criterion used to determine the stability of an oscillator circuit which states that, if the circuit is seen as a loop consisting of an amplifier with gain  $A$  and a linear circuit whose gain  $\beta(j\omega)$  depends on frequency  $\omega$ , then the loop will oscillate with a perfect sine wave at some frequency  $\omega_0$  if at that frequency  $A\beta(j\omega_0) = 1$  exactly, that is, if the magnitude of  $A\beta(j\omega_0)$  is exactly 1 and its phase is  $0^\circ$  or  $360^\circ$ . ( 'bɑ:k,hau:z-ən kri,tir-ē-ən )

**Barkhausen interference** [COMMUN] Interference caused by Barkhausen oscillations. ( 'bɑ:k,hau:z-ən in-tər'fir-əns )

**Barkhausen-Kurz oscillator** [ELECTR] An oscillator of the retarding-field type in which the frequency of oscillation depends solely on the transit time of electrons oscillating about a highly positive grid before reaching the less positive anode. Also known as Barkhausen oscillator; positive-grid oscillator. ( 'bɑ:k,hau:z-ən 'kɔrts 'ɔs-ə,lād-ər )

**Barkhausen oscillation** [ELECTR] Undesired oscillation in the horizontal output tube of a television receiver, causing one or more ragged dark vertical lines on the left side of the picture. ( 'bɑ:k,hau:z-ən 'ɔs-ə'lā-shən )

**Barkhausen-Kurz oscillator** See Barkhausen-Kurz oscillator. ( 'bɑ:k,hau:z-ən 'ɔs-ə,lād-ər )

**barometric fuse** [ENG] A fuse that functions as a result of change in the pressure exerted by the surrounding air. ( 'bār-ə'met-rik 'fyūz )

**bar pattern** [ELECTR] Pattern of repeating lines or bars on a television screen. ( 'bār ,pad-əm )

**bar printer** [COMPUT SCI] An impact printer in which the character heads are mounted on type bars. ( 'bār ,print-ər )

**barrage jamming** [COMMUN] The simultaneous jamming of a number of radio frequencies or even multiple radar bands of frequencies. ( 'bɑ'ræʒ ,jam-ɪŋ )

**barrel printer** [COMPUT SCI] A computer printer in which the entire set of characters is placed around a rapidly rotating cylinder at each print position; computer-controlled print hammers opposite each print position strike the paper and press it against an inked ribbon between the paper and the cylinder when the appropriate character reaches a position opposite the print hammer. ( 'bār-əl ,pri:n-tər )

**barretter** [ELEC] Bolometer that consists of a fine wire or metal film having a positive temperature coefficient of resistivity, so that resistance increases with temperature; used for making power measurements in microwave devices. See ballast resistor. ( 'bɑ'red-ər )

**barrier capacitance** [ELECTR] The capacitance that exists between the  $p$ -type and  $n$ -type semiconductor materials in a semiconductor  $pn$  junction that is reverse-biased so that it does not conduct. Also known as depletion-layer capacitance; junction capacitance. ( 'bār-ē-ər kə,pas-əd-əns )

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**barrier-grid storage tube** See radechon.  
{ 'bar-ē-ər ,grɪd 'stɔːr-ɪj ,tʊb }

**barrier injection transit-time diode** [ELECTR] A microwave diode in which the carriers that traverse the drift region are generated by minority carrier injection from a forward-biased junction instead of being extracted from the plasma of an avalanche region. Abbreviated BARITT diode.  
{ 'bar-ē-ər in'jek-shən 'trans-ət ,tɪm 'dɪ,ɒd }

**barrier layer** See depletion layer. { 'bar-ē-ər ,lā-ər }

**barrier-layer cell** See photovoltaic cell. { 'bar-ē-ər ,lā-ər ,sɛl }

**barrier-layer photocell** See photovoltaic cell.  
{ 'bar-ē-ər ,lā-ər 'fōd-ō ,sɛl }

**barrier-layer rectification** See depletion-layer rectification. { 'bar-ē-ər ,lā-ər ,rek-tə-fə'kā-shən }

**barrier strip** [ELECTR] A device for connecting two cables without using plugs in which bare wires from one cable are connected to lugs of screws on one side of the strip and wires from the other cable are attached at corresponding points on the opposite side. { 'bar-ē-ər ,stri:p }

**barrier voltage** [ELECTR] The voltage necessary to cause electrical conduction in a junction of two dissimilar materials, such as p-n junction diode.  
{ 'bar-ē-ər ,vōl-tij }

**bar winding** [ELEC] An armature winding made up of a series of metallic bars connected at their ends. { 'bār ,wɪnd-ɪŋ }

**base** [COMPUT SCI] See root. [ELECTR] 1. The region that lies between an emitter and a collector of a transistor and into which minority carriers are injected. 2. The part of an electron tube that has the pins, leads, or other terminals to which external connections are made either directly or through a socket. 3. The plastic, ceramic, or other insulating board that supports a printed wiring pattern. { bās }

**base address** See address constant. { bās ə'dres }

**baseband** [COMMUN] The band of frequencies occupied by all transmitted signals used to modulate the radio wave. { 'bās ,bænd }

**baseband frequency response** [COMMUN] Frequency response characteristics of the frequency band occupied by all of the signals used to modulate a transmitted carrier. { 'bās ,bænd 'frē-kwən-sē ri'spāns }

**baseband system** [COMMUN] A communications system in which information is transmitted over a single unmodulated band of frequencies. { 'bās ,bænd ,sis-təm }

**base bias** [ELECTR] The direct voltage that is applied to the majority-carrier contact (base) of a transistor. { 'bās ,bi-əs }

**base-displacement** [COMPUT SCI] In machine-language programming, a technique in which addresses are specified relative to a base address where the beginning of the program is stored. { 'bās dis ,plās-mənt }

**base electrode** [ELECTR] An ohmic or majority carrier contact to the base region of a transistor. { 'bās i'lek,tro:d }

**base font** [COMPUT SCI] The font used in a document if none other is specified. { 'bās ,fənt }

**base insulator** [ELEC] Heavy-duty insulator used to support the weight of an antenna mast and insulate the mast from the ground or some other surface. { 'bās 'in-sə ,lā-d-ər }

**base language** [COMPUT SCI] The component of an extensible language which provides a complete but minimal set of primitive facilities, such as elementary data types, and simple operations and control constructs. { 'bās 'læŋ-gwɪj }

**base line** [ELECTR] The line traced on amplitude-modulated indicators which corresponds to the power level of the weakest echo detected by the radar; it is retraced with every pulse transmitted by the radar but appears as a nearly continuous display on the scope. Abbreviated BL. { 'bās ,lɪn }

**baseline** [ENG] The geographic line between transmitter and receiver locations in bistatic radar, or between pairs of radars or radio receivers in a network, used in calculations relative to the data. Abbreviated BL. { 'bās ,lɪn }

**base-line break** [ELECTR] Technique in radar which uses the characteristic break in the base line on an A-scope display due to a pulse signal of significant strength in noise jamming. { 'bās ,lɪn ,bræk }

**base-line check** See ground check. { 'bās ,lɪn ,tʃek }

**baseload** [ELEC] Minimum load of a power generator over a given period of time. { 'bās ,ləd }

**base-loaded antenna** [ELECTROMAG] Vertical antenna having an impedance in series at the base for loading the antenna to secure a desired electrical length. { 'bās ,ləd-əd ,ænt-en-ə }

**base modulation** [ELECTR] Amplitude modulation produced by applying the modulating voltage to the base of a transistor amplifier. { 'bās ,māj-ə'lā-shən }

**base pin** See pin. { 'bās ,pin }

**base rate area** [COMMUN] Area within which service is given without mileage charges. { 'bās ,rāt 'er-ē-ə }

**base register** See index register. { 'bās ,rej-ə-stər }

**base-spreading resistance** [ELECTR] Resistance which is found in the base of any transistor and acts in series with it, generally a few ohms in value. { 'bās 'spred-ɪŋ ri'zɪs-təns }

**base station** [COMMUN] 1. A land station, in the land mobile service, carrying on a service with land mobile stations (a base station may secondarily communicate with other base stations incident to communications with land mobile stations). 2. A station in a land mobile system which remains in a fixed location and communicates with the mobile stations. { 'bās ,stā-shən }

**base system** [COMPUT SCI] A computer system containing only program modules that carry out basic functions. { 'bās ,sis-təm }

**BASIC** [COMPUT SCI] A procedure-level computer language designed to be easily learned and used by nonprofessionals, and well suited for

## basic batch

- an interactive, conversational mode of operation. Derived from Beginners All-purpose Symbolic Instruction Code. { 'bā-sik }
- basic batch** [COMPUT SCI] The least complex level of computer processing, in which application systems are normally made up of small programs that are run through the computer one at a time and that can process transactions only from sequential files. { 'bā-sik 'bach }
- basic disk operating system** [COMPUT SCI] The part of a computer's operating system that handles the transfer of data between programs and disk units and the control of files. Abbreviated BDOS. { 'bā-sik 'disk ,äp-ə'rād-ij 'sis-təm }
- basic input/output system** [COMPUT SCI] The part of a computer's operating system that handles communications between a program and external devices such as printers and electronic displays. Abbreviated BIOS. { 'bā-sik 'in,püt 'aüt,püt ,sis-təm }
- basic instruction** [COMPUT SCI] An instruction in a computer program which is systematically changed by the program to obtain the instructions which are actually carried out. Also known as presumptive instruction, unmodified instruction. { 'bā-sik in'strək-shən }
- basic linkage** [COMPUT SCI] Computer coding that provides a standard means of connecting a given routine or program with other routines and that can be used repeatedly according to the same rules. { 'bā-sik 'liŋ-kij }
- basic processing unit** [COMMUN] Principal controller and data processor within the communications system. { 'bā-sik 'präs,es-ij ,yü-nət }
- basic Q** See nonloaded Q. { 'bā-sik 'kyü }
- basic software** [COMPUT SCI] Software requirements that are taken into account in the design of the data-processing hardware and usually are provided by the original equipment manufacturer. { 'bā-sik 'söft,wer }
- basic telecommunications access method** [COMPUT SCI] A method of controlling data transmission between a computer's main storage and its terminals and of providing applications programs with the capability of communicating with printers, terminals, and other devices. Abbreviated BTAM. { 'bā-sik ,tel-ə-kə,mjü-nə;kä-shənz 'ak,ses ,meth-əd }
- basic variables** [COMPUT SCI] The *m* variables in a basic feasible solution for a linear programming model. { 'bā-sik 'ver-ē-ə-bälz }
- basket coil** See basket winding. { 'bas-kət ,köl }
- basket winding** [ELECTR] A crisscross coil winding in which successive turns are far apart except at points of crossing, giving low distributed capacitance. Also known as basket coil. { 'bas-kət ,wīnd-ij }
- bass boost** [ELECTR] A circuit that emphasizes the lower audio frequencies, generally by attenuating higher audio frequencies. { 'bäs 'büst }
- bass compensation** [ELECTR] A circuit that emphasizes the low-frequency response of an audio amplifier at low volume levels to offset the lower sensitivity of the human ear to weak low frequencies. { 'bäs ,käm-pən'sā-shən }
- bass control** [ELECTR] A manual tone control that attenuates higher audio frequencies in an audio amplifier and thereby emphasizes bass frequencies. { 'bäs kən'tröl }
- bass reflex baffle** [ENG ACOUS] A loudspeaker baffle having an opening of such size that bass frequencies from the rear of the loudspeaker emerge to reinforce those radiated directly forward. { 'bas 'rē,fleks ,baf-əl }
- bass response** [ELECTR] A measure of the output of an electronic device or system as a function of an input of low audio frequencies. { 'bäs ri ,späns }
- bass trap** [ENG ACOUS] Any device used in a sound-recording studio to absorb sound at frequencies less than about 100 hertz. { 'bäs ,trəp }
- bassy** [ENG ACOUS] Pertaining to sound reproduction that overemphasizes low-frequency notes. { 'bäs-ē }
- batch** [COMPUT SCI] A set of items, records, or documents to be processed as a single unit. { 'bach }
- batch-and-forward system** [COMPUT SCI] A data-processing system in which data are collected for a time and then transmitted as a unit to a computer. { 'bach ən 'fōr-wərd ,sis-təm }
- batching** [COMPUT SCI] Grouping records for the purpose of processing them in a computer. { 'bach-ij }
- batch job** [COMPUT SCI] One of a group of jobs that are executed together by batch-processing techniques. { 'bach ,jəb }
- batch-oriented applications** [COMMUN] Applications of data communications that involve the transfer of thousands or even millions of bytes of data and are usually point-to-point and computer-to-computer. { 'bach ,ör-ē 'lent-əd ,äp-lä'kā-shənz }
- batch processing** [COMPUT SCI] A technique that uses a single program loading to process many individual jobs, tasks, or requests for service. { 'bach ,präs-es-ij }
- batch stream** [COMPUT SCI] A group of batch processing programs that are scheduled to run on a computer. { 'bach ,strēm }
- batch system** [COMPUT SCI] A computer system that uses batch processing. { 'bach ,sis-təm }
- batch total** [COMPUT SCI] The total for a specified constituent quantity in a batch; used to verify the accuracy of operations on the batch. { 'bach 'tōd-əl }
- bat-handle switch** [ELEC] A toggle switch having an actuating lever shaped like a baseball bat. { 'bat ,hand-əl ,switʃ }
- bathtub capacitor** [ELEC] A capacitor enclosed in a metal housing having broadly rounded corners like those on a bathtub. { 'bath,təb kə'pas-əd-ər }
- battery** [ELEC] A direct-current voltage source made up of one or more units that convert chemical, thermal, nuclear, or solar energy into electrical energy. { 'bad-ə-rē }
- battery charger** [ELEC] A rectifier unit used to change alternating to direct power for

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charging a storage battery. Also known as  
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**battery clip** [ELEC] A terminal of a connecting  
wire having spring jaws that can be quickly  
snapped on a terminal of a device, such as a  
battery, to which a temporary wire connection is  
desired. { 'bad-ə-rē ,klip }

**battery eliminator** [ELECTR] A device which sup-  
plies electron tubes with voltage from electric  
power supply mains. { 'bad-ə-rē ə'lim-ə ,nād-ər }

**battery, overvoltage, ringing, supervision, coding,  
hybrid and test access** See BORSCHT.  
{ 'bad-ə-rē [ō-vər'vōl-tij 'rɪŋ-ɪŋ ,sü-pər'vɪz-ən  
'kōd-ɪŋ 'hɪ-brɪd ən 'test ,ək,ses ]

**battery separator** [ELEC] An insulating plate in-  
serted between the positive and negative plates  
of a battery to prevent them from touching.  
{ 'bad-ə-rē ,sep-ə ,rād-ər }

**baud** [COMMUN] A unit of telegraph signaling  
speed equal to the number of code elements  
(pulses and spaces) per second or twice the  
number of pulses per second. { 'bōd }

**Baudot code** [COMMUN] A teleprinter code that  
uses a combination of five or six marking and  
spacing intervals of equal duration for each  
character, no longer in extensive use since it has  
been replaced by ASCII code. { 'bō'dō ,kōd }

**bay** [COMPUT SCI] See drive bay. [ELECTROMAG]  
One segment of an antenna array. { bā }

**Bayard-Alpert ionization gage** [ELECTR] A type of  
ionization vacuum gage using a tube with an  
electrode structure designed to minimize x-ray-  
induced electron emission from the ion collector.  
{ |bā-ərd |əl ,pɑrt 'ɪ-ɒn-ə'zā-shən ,gā }

**bayonet base** [ELEC] A tube base or lamp base  
having two projecting pins on opposite sides  
of a smooth cylindrical surface to engage in  
corresponding slots in a bayonet socket and hold  
the base firmly in the socket. { |bā-ə'net ,bās }

**bayonet Neil-Concelman connector** See BNC con-  
nector. { ,bā-ə'net 'nēl 'kəns-əl-mən kə ,nek-tər }

**bazooka** See balun. { 'bā'zū-kə }

**B battery** [ELECTR] The battery that furnishes  
required direct-current voltages to the plate and  
screen-grid electrodes of the electron tubes in a  
battery-operated circuit. { 'bē ,bad-ə-rē }

**BBD** See bucket brigade device.

**B box** See index register. { 'bē ,bāks }

**BBS** See bulletin board system.

**BCAS** See beacon collision avoidance system.

**BCD system** See binary coded decimal system.  
{ |bē'sē'dē ,sis-təm }

**B-display** [ELECTR] The presentation of radar out-  
put data in rectangular coordinates in which  
range and azimuth are plotted on the coordinate  
axes. Also known as B-indicator, B-scan, B-scope;  
range-bearing display. { 'bē dɪs'plā }

**BDOS** See basic disk operating system. { 'bē ,dōs }

**beacon** [ELECTR] A radio transmitter and antenna  
used to indicate its location or that of the

vehicle carrying it; a beacon that responds to  
an interrogation, as in secondary radar, is more  
properly called a transponder. { 'bē-kən }

**beacon collision avoidance system** [NAV] An  
airborne collision avoidance system that makes  
use of the air-traffic control radio beacon sys-  
tem (ATCRBS) transponders. Abbreviated BCAS.  
{ 'bē-kən kə'lɪz-ən ə'vōɪd-əns ,sis-təm }

**beacon delay** [ELECTR] The amount of trans-  
ponding delay within a beacon, that is, the time  
between the arrival of a signal and the response  
of the beacon. { 'bē-kən dɪ'lā }

**beacon presentation** [ELECTR] The radar display  
resulting from receipt of signals from a beacon.  
{ 'bē-kən ,prē-zən'tā-shən }

**beacon skipping** [ELECTR] A condition where  
transponder return pulses from a beacon are  
missing at the interrogating radar. { 'bē-kən  
,skip-ɪŋ }

**beacon stealing** [ELECTR] Loss of beacon track-  
ing by one radar due to stronger signals  
from other beacons, transponders, or interfering  
radars. { 'bē-kən ,stēl-ɪŋ }

**beacon tracking** [ENG] The tracking of a moving  
object by means of signals emitted from a  
transmitter or transponder within or attached to  
the object. { 'bē-kən ,trak-ɪŋ }

**beacon-tracking radar** [NAV] Radar equipment  
used in air-traffic control facilities for beacon  
tracking. { 'bē-kən ,trak-ɪŋ ,rā,dār }

**bead** [COMPUT SCI] A small subroutine. [ELEC-  
TROMAG] A glass, ceramic, or plastic insulator  
through which passes the inner conductor of a  
coaxial transmission line and by means of which  
the inner conductor is supported in a position  
coaxial with the outer conductor. { bēd }

**beaded transmission line** [ELECTROMAG] Line  
using beads to support the inner conduc-  
tor in coaxial transmission lines. { 'bēd-əd  
tranz'mɪsh-ən ,lɪn }

**bead thermistor** [ELEC] A thermistor made by  
applying the semiconducting material to two wire  
leads as a viscous droplet, which cements the  
leads upon firing. { 'bēd θər'mɪs-tər }

**beam angle** See beam width. { 'bēm ,aŋ-gəl }

**beam antenna** [ELECTROMAG] An antenna that  
concentrates its radiation into a narrow beam in  
a definite direction. { 'bēm ən'ten-ə }

**beam approach beacon system** See blind ap-  
proach beacon system. { 'bēm ə'prōč 'bē-kən  
,sis-təm }

**beam blank** See blank. { 'bēm blæŋk }

**beam box** See wall box. { 'bēm ,bāks }

**beam coupling** [ELECTR] The production of an al-  
ternating current in a circuit connected between  
two electrodes that are close to, or in the path  
of, a density-modulated electron beam. { 'bēm  
,kəp-lɪŋ }

**beam current** [ELECTR] The electric current deter-  
mined by the number and velocity of electrons in  
an electron beam. { 'bēm ,kər-ənt }

**beam-deflection tube** [ELECTR] An electron-  
beam tube in which the current to an output  
electrode is controlled by transversely moving  
the electron beam. { 'bēm dɪ'flek-shən ,tüb }

## beam efficiency

**beam efficiency** [ELECTROMAG] The fraction of the total radiated energy from an antenna contained in a single beam. ( 'bēm |,fīsh-ən-sē )

**beam-forming electrode** [ELECTR] Electron-beam focusing elements in power tetrodes and cathode-ray tubes. ( 'bēm ,fōrm-īŋ |'lek,trod )

**beamguide** [ELECTROMAG] A set of elements arranged and spaced so as to form and conduct a beam of electromagnetic radiation. ( 'bēm ,gīd )

**beam holding** [ELECTR] Use of a diffused beam of electrons to regenerate the charges stored on the screen of a cathode-ray storage tube. ( 'bēm ,hōl-dīŋ )

**beam-indexing tube** [ELECTR] A single-beam color television picture tube in which the color phosphor strips are arranged in groups of red, green, and blue. ( 'bēm |'n,dēk-sīŋ ,tüb )

**beam lead** [ELECTR] A flat thick-film lead, sometimes of gold, deposited on a semiconductor chip chemically or by evaporation, as a connecting lead for a semiconductor device or integrated circuit. ( 'bēm ,lēd )

**beam lobe switching** [ELECTR] Method of determining the direction of a remote object by comparison of the signals corresponding to two or more successive beam angles, differing slightly from the direction of the object. ( 'bēm ,lōb ,swīch-īŋ )

**beam magnet** See convergence magnet. ( 'bēm ,mag-nēt )

**beam parametric amplifier** [ELECTR] Parametric amplifier that uses a modulated electron beam to provide a variable reactance. ( 'bēm ,par-ə'me-trīk 'am-plā,fī-ər )

**beam pattern** See directivity pattern. ( 'bēm ,pad-əm )

**beam power tube** [ELECTR] A vacuum tube, most often an amplifier, used in radar and other microwave transmitters in which the electrons travel from the cathode in a well-focused beam, to interact with the electromagnetic signal being amplified. ( 'bēm |'paü-ər ,tüb )

**beam recording** [ELECTR] A method of using an electron beam to write data generated by a computer directly on microfilm. ( 'bēm rī'kōrd-īŋ )

**beam splitting** [ELECTR] Process for increasing angle accuracy in locating targets by radar by noting the azimuths at which one radar scan first discloses a target and at which the echoes cease, revealing the azimuth center, or by similarly intended algorithms in more automated systems. ( 'bēm ,splīd-īŋ )

**beam spread** [ENG] The angle of divergence from the central axis of an electromagnetic or acoustic beam as it travels through a material. ( 'bēm ,sprēd )

**beam steering** [ELECTR] Changing the direction of the major lobe of a radiation pattern, usually by switching antenna elements. ( 'bēm ,stīr-īŋ )

**beam switching** [ELECTR] Method of obtaining more accurately the bearing or elevation of an object by comparing the signals received when the beam is in directions differing slightly in

bearing or elevation; when these signals are equal, the object lies midway between the beam axes. Also known as lobe switching. ( 'bēm ,swīch-īŋ )

**beam-switching tube** [ELECTR] An electron tube which has a series of electrodes arranged around a central cathode and in which an electron beam is switched from one electrode to another. Also known as cyclophon. ( 'bēm ,swīch-īŋ ,tüb )

**beam tetrode** See beam power tube. ( 'bēm |'tē ,trōd )

**beam width** [ELECTROMAG] The angle, measured in a horizontal plane, between the directions at which the intensity of an electromagnetic beam, such as a radar or radio beam, is one-half its maximum value. Also known as beam angle. ( 'bēm ,wīdθ )

**bearing cursor** [ENG] Of a radar set, the radial line inscribed on a transparent disk which can be rotated manually about an axis coincident with the center of the plan position indicator, used for bearing determination. Also known as mechanical bearing cursor. ( 'ber-īŋ ,kərs-ər )

**bearing loss** [ELEC] Loss of power in a machine caused by friction between the shaft and the bearing. ( 'ber-īŋ ,lōs )

**bearing marker** See azimuth marker. ( 'ber-īŋ ,mārk-ər )

**bearing resolution** [ELECTR] Minimum angular separation in a horizontal plane between two targets at the same range that will allow an operator to obtain data on either target. ( 'ber-īŋ ,rez-ə ,lū-shən )

**beat frequency** [ELECTR] The frequency of a signal equal to the difference in frequencies of two signals which produce the signal when they are combined in a nonlinear circuit. ( 'bēt ,frē-kwən-sē )

**beat-frequency oscillator** [ELECTR] An oscillator in which a desired signal frequency, such as an audio frequency, is obtained as the beat frequency produced by combining two different signal frequencies, such as two different radio frequencies. Abbreviated BFO. Also known as heterodyne oscillator. ( 'bēt ,frē-kwən-sē 'ās-ə ,lād-ər )

**beating-in** [ELECTR] Interconnecting two transmitter oscillators and adjusting one until no beat frequency is heard in a connected receiver; the oscillators are then at the same frequency. ( 'bēd-īŋ |'n )

**beat note** [ELECTR] The beat frequency whose signal is produced by two signals having waves that are sinusoidal. ( 'bēt ,nōt )

**beat reception** See heterodyne reception. ( 'bēt rī'sep-shən )

**beat-time programming** [COMPUT SCI] A type of programming which requires that data be made available to the computer during some ongoing process prior to a particular point in time. ( 'bēt 'tīm 'prō,gram-īŋ )

**beat tone** [ENG ACOUS] Musical tone due to beats, produced by the heterodyning of two high-frequency wave trains. ( 'bēt ,tōn )

These signals are between the beam  
pitching. { 'bēm

An electron tube  
is arranged around  
which an electron  
cathode to another.  
{ 'bēm ,swich-ŋ

tube. { 'bēm 'te

angle, measured  
of the magnetic beam,  
is one-half its  
as beam angle.

in set, the radial  
disk which can  
axis coincident  
position indicator.  
Also known as  
{ 'ber-ŋ ,kər-sər }  
in a machine  
shaft and the

marker. { 'ber-ŋ

minimum angular  
between two tar-  
low an operator  
{ 'ber-ŋ ,rez-ə

frequency of a sig-  
frequencies of  
signal when they  
circuit. { 'bēt

{ } An oscillator  
frequency, such as  
used as the beat  
of two different  
radio  
also known as  
{ 'kwən-sē 'ās-ə

ing two trans-  
one until no  
ected receiver;  
me frequency.

frequency whose  
having waves

ption. { 'bēt

SCI) A type of  
data be made  
some ongoing  
time. { 'bēt

one due to  
of two high-  
{

**beavertail** [ELECTROMAG] Fan-shaped radar beam,  
wide in the horizontal plane and narrow in the  
vertical plane, which is swept up and down for  
height finding. { 'be-vər,tāl }

**Beck effect** [ELEC] An increase in the light in-  
tensity of an arc lamp whose carbon anode has  
been treated with rare-earth salts when a certain  
current is exceeded. { 'bek 'i'fekt }

**Becquerel effect** [ELEC] The phenomenon of a  
current flowing between two unequally illumi-  
nated electrodes of a certain type when they  
are immersed in an electrolyte. { 'bek-ə'rel or  
be'krel 'i'fekt }

**bedspring array** See billboard array. { 'bed,sprɪŋ  
ə'rā }

**beetle** See rammer. { 'bēd-əl }

**BEGIN** [COMPUT SCI] An enclosing statement of  
ALGOL used to indicate the beginning of a block;  
any variable in a block enclosed by BEGIN and  
END is normally local to this block. { bi'gin }

**beginning-of-information marker** [COMPUT SCI]  
A section of magnetic tape covered with reflective  
material that indicates the beginning of the  
area on which information is to be recorded.  
{ bi'gin-ŋ ov ,in-fər'mā-shən ,mār-kər }

**B eliminator** [ELECTR] Power pack that changes  
the alternating-current powerline voltage to the  
direct-current source required by plant circuits of  
vacuum tubes or semiconductor devices. { 'bē  
i'lim-ə,nād-ər }

**bell character** [COMPUT SCI] A control character  
that activates a bell, alarm, or other audio device  
to get someone's attention. { 'bel ,kar-ik-tər }

**bells and whistles** [COMPUT SCI] Special hardware  
features that are likely to attract attention but  
may not be important or even practical. { 'belz  
ən 'wis-əlz }

**bell transformer** [ELEC] An iron-core, step-down  
transformer with a voltage step-down ratio of  
approximately 6 to 1 or 12 to 1, used in low-  
current power supplies and frequently in circuits  
for doorbells, alarm bells, and buzzers. { 'bel  
tranz,för-mər }

**bell wire** [ELEC] A copper wire, usually solid  
rather than stranded, and soft-drawn rather than  
hard-drawn, used in low-current, low-voltage  
applications. { 'bel ,wɪr }

**belt printer** [COMPUT SCI] A type of impact printer  
similar to a chain printer in which the characters  
are carried on a moving belt rather than a chain.  
{ 'belt ,prɪnt-ər }

**benchmark problem** [COMPUT SCI] A problem to  
be run on computers to evaluate their perfor-  
mances relative to one another. { 'bench,märk  
prəb-ləm }

**benchmark test** [COMPUT SCI] A test of computer  
software or hardware that is generally run on  
a number of products to compare their perfor-  
mance. { 'bench,märk ,test }

**bender element** [ELECTR] A combination of two  
thin strips of different piezoelectric materials  
bonded together so that when a voltage is  
applied, one strip increases in length and the  
other becomes shorter, causing the combination  
to bend. { 'ben-dər 'el-ə-mənt }

**bent-pipe system** [COMMUN] A transponder on  
board a communications satellite that performs  
no signal processing other than heterodyning  
(frequency-changing) the uplink frequency bands  
to those of the downlinks. { ,bent 'pɪp ,sis-təm }

**berg-y-bit** See growler. { 'bærg-ē ,bit }

**beta** [ELECTR] The current gain of a transistor that  
is connected as a grounded-emitter amplifier,  
expressed as the ratio of change in collector  
current to resulting change in base current, the  
collector voltage being constant. { 'bād-ə }

**beta circuit** [ELEC] The part of an amplifier circuit  
that is responsible for the feedback. { 'bād-ə  
,sər-kət }

**beta-cutoff frequency** [ELECTR] The frequency at  
which the current amplification of an amplifier  
transistor drops to 3 decibels below its value at  
1 kilohertz. { 'bād-ə 'kəd,əf ,frē-kwən-sē }

**beta rule** See reduction rule. { 'bād-ə ,rül }

**beta software** [COMPUT SCI] An application or  
program that is in development and undergoing  
testing. Also known as beta version; betaware.  
{ ,bād-ə 'sɒf,wer }

**beta test** [COMPUT SCI] The first test of a computer  
system outside the laboratory, in its actual  
working environment. { 'bād-ə ,test }

**beta test site** [COMPUT SCI] An organization or com-  
pany that tests a software or hardware product  
under actual working conditions and reports the  
results to the vendor. { 'bād-ə ,test ,sɪt }

**beta version** See beta software. { 'bād-ə ,vər-  
zhən }

**betaware** See beta software. { 'bād-ə ,wer }

**Beverage antenna** See wave antenna. { 'bev-riŋ  
ən'ten-ə }

**beyond-the-horizon communication** See scat-  
ter propagation. { bə'yænd tə hə'raɪz-ən kə  
,myū-nə'kə-shən }

**Bézier curve** [COMPUT SCI] A curve in a drawing  
program that is defined mathematically, and  
whose shape can be altered by dragging either of  
its two interior determining points with a mouse.  
{ 'bāz-yā 'kərv }

**BFL** See buffered FET logic.

**BFO** See beat-frequency oscillator.

**B-frames** See bidirectional pictures. { 'bē ,frāmz }

**B-H meter** [ENG] A device used to measure the  
intrinsic hysteresis loop of a sample of magnetic  
material. { 'bē'æch ,mēd-ər }

**BI** See abampere.

**bias** [ELEC] 1. A direct-current voltage used on  
signaling or telegraph relays or electromagnets  
to secure desired time spacing of transitions  
from marking to spacing. 2. The restraint of a  
relay armature by spring tension to secure a  
desired time spacing of transitions from marking  
to spacing. 3. The effect on teleprinter signals  
produced by the electrical characteristics of the  
line and equipment. 4. The force applied to a  
relay to hold it in a given position. [ELECTR]  
1. A direct-current voltage applied to a transistor  
control electrode to establish the desired oper-  
ating point. 2. See grid bias. { 'bi-əs }

**bias cell** [ELECTR] A small dry cell used singly or  
in series to provide the required negative bias for

the grid circuit of an electron tube. Also known as grid-bias cell. ( 'bī-əs, sei )

**bias current** [ELECTR] 1. An alternating electric current above about 40,000 hertz added to the audio current being recorded on magnetic tape to reduce distortion. 2. An electric current flowing through the base-emitter junction of a transistor and adjusted to set the operating point of the transistor. ( 'bī-əs, kār-ənt )

**bias distortion** [ELECTR] Distortion resulting from the operation on a nonlinear portion of the characteristic curve of a vacuum tube or other device, due to improper biasing. ( 'bī-əs dis 'tɔr-shən )

**biased automatic gain control** See delayed automatic gain control. ( 'bī-əst ɔd-ə'mad-ik 'gān kən, trɔl )

**bias meter** [COMMUN] A meter used in teletypewriter work for measuring signal bias directly in percent, a positive reading indicates a marking signal bias, a negative reading, a spacing signal bias. ( 'bī-əs, mēd-ər )

**bias oscillator** [ELECTR] An oscillator used in a magnetic recorder to generate the alternating-current signal that is added to the audio current being recorded on magnetic tape to reduce distortion. ( 'bī-əs, əs-ə, lād-ər )

**bias register** [COMPUT SCI] A computer device that stores a number that is added to the memory address each time the computer memory is referenced by the program, thus offsetting the program addresses by a fixed amount. ( 'bī-əs, 'rej-ə-stər )

**bias resistor** [ELECTR] A resistor used in the cathode or grid circuit of an electron tube to provide a voltage drop that serves as the bias. ( 'bī-əs ri'sis-tər )

**bias voltage** [ELECTR] A voltage applied or developed between two electrodes as a bias. ( 'bī-əs, vɔl-tij )

**bias winding** [ELEC] A control winding that carries a steady direct current which serves to establish desired operating conditions in a magnetic amplifier or other magnetic device. ( 'bī-əs, wīn-dīŋ )

**BICMOS technology** [ELECTR] An integrated circuit technology that combines bipolar transistors and CMOS devices on the same chip. ( 'bī'sē, 'mɔs tek,nəl-ə-jē )

**biconditional gate** See equivalence gate. ( ,bī-kən'dish-ən-əl 'gāt )

**biconical antenna** [ELECTROMAG] An antenna consisting of two metal cones having a common axis with their vertices coinciding or adjacent and with coaxial-cable or waveguide feed to the vertices. ( bī'kən-ə-kəl an'ten-ə )

**bidirectional** [ENG] Being directionally responsive to inputs in opposite directions. ( ,bī-də'rek-shən-əl )

**bidirectional antenna** [ELECTROMAG] An antenna that radiates or receives most of its energy in only two directions. ( ,bī-də'rek-shən-əl an'ten-ə )

**bidirectional clamping circuit** [ELECTR] A clamping circuit that functions at the prescribed time

irrespective of the polarity of the signal source at the time the pulses used to actuate the clamping action are applied. ( ,bī-də'rek-shən-əl 'klam-pīŋ, sər-kət )

**bidirectional clipping circuit** [ELECTR] An electronic circuit that prevents transmission of the portion of an electrical signal that exceeds a prescribed maximum or minimum voltage value. ( ,bī-də'rek-shən-əl 'klip-pīŋ, sər-kət )

**bidirectional counter** See forward-backward counter. ( ,bī-də'rek-shən-əl 'kaʊn-tər )

**bidirectional data bus** [COMPUT SCI] A channel over which data can be transmitted in either direction within a computer system. ( ,bī-də'rek-shən-əl 'dad-ə, bʌs )

**bidirectional microphone** [ENG ACOUS] A microphone that responds equally well to sounds reaching it from the front and rear, corresponding to sound incidences of 0 and 180°. ( ,bī-də'rek-shən-əl 'mī-kra,fɔn )

**bidirectional parallel port** [COMPUT SCI] A parallel port that can transfer data in both directions, and at speeds much greater than a standard parallel port. ( ,bī-də'rek-shən-əl ,par-ə,lel 'pɔrt )

**bidirectional pictures** [COMMUN] In MPEG-2, pictures that use both future and past pictures as a reference. This technique is termed bidirectional prediction; bidirectional pictures provide the most compression and do not propagate coding errors as they are never used as a reference. Also known as B-frames; B-pictures. ( ,bī-də'rek-shən-əl 'pɪk-ʧərtz )

**bidirectional printer** [COMPUT SCI] A printer in which printing can be done in both a left-to-right and a right-to-left direction. ( ,bī-də'rek-shən-əl 'prɪnt-ər )

**bidirectional pulse-amplitude modulation** See double-polarity pulse-amplitude modulation. ( ,bī-də'rek-shən-əl 'pʌls ,lam-plə,tʃüd ,mäj-ə'lā-shən )

**bidirectional transducer** [ELECTR] A transducer capable of measuring in both positive and negative directions from a reference position. Also known as bilateral transducer. ( ,bī-də'rek-shən-əl tranz'dʊ-sər )

**bidirectional transistor** [ELECTR] A transistor that provides switching action in either direction of signal flow through a circuit, widely used in telephone switching circuits. ( ,bī-də'rek-shən-əl tran'zɪs-tər )

**bidirectional triode thyristor** [ELECTR] A gate-controlled semiconductor switch designed for alternating-current power control. ( ,bī-də'rek-shən-əl 'trī,ɔd θɪ'rɪs-tər )

**bifilar electrometer** [ENG] An electrostatic voltmeter in which two conducting quartz fibers, stretched by a small weight or spring, are separated by their attraction in opposite directions toward two plate electrodes carrying the voltage to be measured. ( bī'fɪ-lər i-lek'trām-əd-ər )

**bifilar resistor** [ELEC] A resistor wound with a wire doubled back on itself to reduce the inductance. ( bī'fɪ-lər ri'zɪs-tər )

**bifilar transformer** [ELEC] A transformer in which wires for the two windings are wound side by

nal source at  
e the clamp-  
l'rek-shən-əl

ETR] An elec-  
sion of the  
it exceeds a  
oltage value.

rd-backward  
-tər }

sci] A chan-  
nsmitted in  
ter system.

us] A micro-  
to sounds  
rear, corre-  
0 and 180°

sci] A paral-  
directions,  
andard par-  
-el 'pört }  
n MPEG-2,  
ast pictures  
ned bidirec-  
res provide  
t propagate  
used as a  
B-pictures

A printer in  
left-to-right  
rek-shən-əl

ulation See  
modulation.  
d ,mäj-ə'lä-

transducer  
ositive and  
ence posi-  
transducer

transistor  
either di-  
a circuit;  
ng circuits.

TR] A gate-  
signed for  
,bī-də'rek-

static volt-  
artz fibers,  
ng, are sep-  
directions  
the voltage  
-əd-ər }

nd with a  
duce the

er in which  
nd side by

side to give extremely tight coupling. { bī'fi-lər  
tranz'fōr-mər }

**bifilar winding** [ELEC] A winding consisting of  
two insulated wires, side by side, with currents  
traveling through them in opposite directions.  
{ bī'fi-lər 'wīn-dīg }

**bifurcated contact** [ELEC] A contact having a  
forked shape such that it can slide over and inter-  
lock with an identical mating contact. { 'bī-fər  
kād-əd 'kän,takt }

**bigit** See bit. { 'bij-ət }

**big LEO system** [COMMUN] A system of relatively  
large satellites in low earth orbit (LEO) to provide  
global mobile handheld telephony and other  
services. { ,big 'lē-ō ,sis-təm }

**big M method** [COMPUT SCI] A technique for  
solving linear programming problems in which  
artificial variables are assigned cost coefficients  
which are a very large number M, say,  $M = 10^{25}$ .  
{ ,big 'em ,meth-əd }

**bilateral** [ELECTR] Having a voltage current char-  
acteristic curve that is symmetrical with respect  
to the origin. { bī'lād-ə-rəl }

**bilateral amplifier** [ELECTR] An amplifier capable  
of receiving as well as transmitting signals; used  
primarily in transceivers. { bī'lād-ə-rəl 'am-plə  
,fī-ər }

**bilateral antenna** [ELECTROMAG] An antenna hav-  
ing maximum response in exactly opposite direc-  
tions, 180° apart, such as a loop. { bī'lād-ə-rəl  
an'ten-ə }

**bilateral circuit** [ELEC] Circuit wherein equip-  
ment at opposite ends is managed, operated, and  
maintained by different services. { bī'lād-ə-rəl  
'sər-kət }

**bilateral network** [ELEC] A network or circuit in  
which the magnitude of the current remains the  
same when the voltage polarity is reversed.  
{ bī'lād-ə-rəl 'net,wərk }

**bilateral transducer** See bidirectional transducer.  
{ bī'lād-ə-rəl tranz'dü-sər }

**billboard array** [ELECTROMAG] A broadside an-  
tenna array consisting of stacked dipoles spaced  
one-fourth to three-fourths wavelength apart in  
front of a large sheet-metal reflector. Also known  
as bedspring array; mattress array. { 'bil,börd  
ə'rā }

**bimac core** See bistable magnetic core. { 'bī,mag  
,kōr }

**bimorph cell** [ELECTR] Two piezoelectric plates  
cemented together in such a way that an applied  
voltage causes one to expand and the other to  
contract so that the cell bends in proportion to  
the applied voltage; conversely, applied pressure  
generates double the voltage of a single cell; used  
in phonograph pickups and microphones. { 'bī  
,mōrf ,sɛl }

**bin** [COMPUT SCI] A magnetic-tape memory in  
which a number of tapes are stored in a single  
housing. { bin }

**binary** [COMPUT SCI] Possessing a property for  
which there exists two choices or conditions, one  
choice excluding the other. { 'bīn-ə-rē }

**binary arithmetic operation** [COMPUT SCI] An  
arithmetical operation in which the operands

are in the form of binary numbers. Also known  
as binary operation. { 'bīn-ə-rē ,ar-ith'med-ik  
äp-ə'rā-shən }

**binary cell** [COMPUT SCI] An elementary unit of  
computer storage that can have one or the other  
of two stable states and can thus store one bit of  
information. { 'bīn-ə-rē ,sɛl }

**binary chain** [COMPUT SCI] A series of binary cir-  
cuit elements so arranged that each can change  
the state of the one following it. { 'bīn-ə-rē  
'chān }

**binary chop** See binary search. { 'bīn-ə-rē 'chäp }

**binary code** [COMPUT SCI] A code in which each  
allowable position has one of two possible  
states, commonly 0 and 1; the binary number  
system is one of many binary codes. { 'bīn-ə-rē  
'kōd }

**binary coded character** [COMPUT SCI] One el-  
ement of a notation system representing al-  
phanumeric characters such as decimal digits,  
alphabetic letters, and punctuation marks by  
a predetermined configuration of consecutive  
binary digits. { 'bīn-ə-rē ,kōd-əd 'kar-ik-tər }

**binary coded decimal system** [COMPUT SCI] A  
system of number representation in which each  
digit of a decimal number is represented by  
a binary number. Abbreviated BCD system.  
{ 'bīn-ə-rē ,kōd-əd 'des-məl ,sis-təm }

**binary coded decimal-to-decimal converter**  
[COMPUT SCI] A computer circuit which selects  
one of ten outputs corresponding to a four-bit  
binary coded decimal input, placing it in the  
0 state and the other nine outputs in the 1  
state. { 'bīn-ə-rē ,kōd-əd 'des-məl tə 'des-məl  
kän'vərd-ər }

**binary coded octal system** [COMPUT SCI] Octal  
numbering system in which each octal digit is  
represented by a three-place binary number.  
{ 'bīn-ə-rē ,kōd-əd 'äk-təl ,sis-təm }

**binary component** [ELECTR] An electronic com-  
ponent that can be in either of two conditions  
at any given time. Also known as binary device.  
{ 'bīn-ə-rē kəm'pō-nənt }

**binary conversion** [COMPUT SCI] Converting a  
number written in binary notation to a number  
system with another base, such as decimal, octal,  
or hexadecimal. { 'bīn-ə-rē kən'vər-zhən }

**binary counter** See binary scaler. { 'bīn-ə-rē  
'kaünt-ər }

**binary decision** [COMPUT SCI] A decision between  
only two alternatives. { 'bīn-ə-rē di'sizh-ən }

**binary device** See binary component. { 'bīn-ə-rē  
di'vīs }

**binary digit** See bit. { 'bīn-ə-rē 'dij-ət }

**binary dump** [COMPUT SCI] The operation of copy-  
ing the contents of a computer memory in binary  
form onto an external storage device. { 'bīn-ə-rē  
'dʌmp }

**binary encoder** [ELECTR] An encoder that  
changes angular, linear, or other forms of  
input data into binary coded output characters.  
{ 'bīn-ə-rē en'kōd-ər }

**binary field** [COMPUT SCI] A field that contains  
data in the form of binary numbers. { 'bīn-ə-rē  
'fēld }



## binary file

**binary file** [COMPUT SCI] A computer program in machine language that can be directly executed by the computer. ( 'bīn-ə-rē 'fīl )

**binary incremental representation** [COMPUT SCI] A type of incremental representation in which the value of change in a variable is represented by one binary digit which is set equal to 1 if there is an increase in the variable and to 0 if there is a decrease. ( 'bīn-ə-rē ,ɪŋ-krə'men-təl ,rep-ri ,zen'tā-shən )

**binary large object** [COMPUT SCI] In a database management system, a file-storage system used most often for multimedia files (large files). Abbreviated BLOB. ( 'bīn-ə-rē 'lɑːrj 'ɒb,jekt )

**binary loader** [COMPUT SCI] A computer program which transfers to main memory an exact image of the binary pattern of a program held in a storage or input device. ( 'bīn-ə-rē 'lɔːd-ər )

**binary logic** [ELECTR] An assembly of digital logic elements which operate with two distinct states. ( 'bīn-ə-rē 'lɔːj-ɪk )

**binary operation** See binary arithmetic operation. ( 'bīn-ə-rē əp-ə'rā-shən )

**binary phase-shift keying** [COMMUN] Keying of binary data or Morse code dots and dashes by  $\pm 90^\circ$  phase deviation of the carrier. Abbreviated BPSK. ( 'bīn-ə-rē 'fāz ,shift 'kē-ɪŋ )

**binary point** [COMPUT SCI] The character, or the location of an implied symbol, that separates the integral part of a numerical expression from its fractional part in binary notation. ( 'bīn-ə-rē 'pɔɪnt )

**binary scaler** [ELECTR] A scaler that produces one output pulse for every two input pulses. Also known as binary counter; scale-of-two circuit. ( 'bīn-ə-rē 'skā-lər )

**binary search** [COMPUT SCI] A dichotomizing search in which the set of items to be searched is divided at each step into two equal, or nearly equal, parts. Also known as binary chop. ( 'bīn-ə-rē 'sɑːtʃ )

**binary signal** [ELECTR] A voltage or current which carries information by varying between two possible values, corresponding to 0 and 1 in the binary system. ( 'bīn-ə-rē 'sɪŋ-nəl )

**binary system** [ENG] Any system containing two principal components. ( 'bīn-ə-rē 'sɪs-təm )

**binary word** [COMPUT SCI] A group of bits which occupies one storage address and is treated by the computer as a unit. ( 'bīn-ə-rē 'wɜːd )

**B-indicator** See B-display. ( 'bi 'ɪn-də ,kād-ər )

**binding post** [ELEC] A manually turned screw terminal used for making electrical connections. ( 'bɪn-dɪŋ ,pɔːst )

**binding time** [COMPUT SCI] 1. The instant when a symbolic expression in a computer program is reduced to a form which is directly interpretable by the hardware. 2. The instant when a variable is assigned its data type, such as integer or string. ( 'bɪn-dɪŋ ,tɪm )

**binistor** [ELECTR] A silicon *npn* tetraode that serves as a bistable negative-resistance device. ( ,bɪ'nɪs-tər )

**binode** [ELECTR] An electron tube with two anodes and one cathode used as a full-wave rectifier. Also known as double diode. ( 'bɪ ,nɒd )

**binomial array antenna** [ELECTROMAG] Directional antenna array for reducing minor lobes and providing maximum response in two opposite directions. ( bɪ'nɒ-mi-əl ə'rā an'ten-ə )

**biochemical fuel cell** [ELEC] An electrochemical power generator in which the fuel source is bioorganic matter; air is the oxidant at the cathode, and microorganisms catalyze the oxidation of the bioorganic matter at the anode. ( ,bi-ɔ'kem-ə-kəl 'fyʊl ,sel )

**biochip** [ELECTR] An experimental type of integrated circuit whose basic components are organic molecules. ( 'bi-ɔ ,tʃɪp )

**bioinformatics** [COMPUT SCI] The use of computers to study biological systems. ( ,bi-ɔ ,ɪn-fər'mad-ɪks )

**bioinstrumentation** [ENG] The use of instruments attached to animals and humans to record biological parameters such as breathing rate, pulse rate, body temperature, or oxygen in the blood. ( ,bi-ɔ ,ɪn-strə-mən'tā-shən )

**biomedical engineering** [ENG] The application of engineering technology to the solution of medical problems; examples are the development of prostheses such as artificial valves for the heart, various types of sensors for the blind, and automated artificial limbs. ( ,bi-ɔ 'med-ə-kəl ,en-ɔ'niːr-ɪŋ )

**biometric device** [COMPUT SCI] A device that identifies persons seeking access to a computing system by determining their physical characteristics through fingerprints, voice recognition, retina patterns, pictures, weight, or other means. ( ,bi-ɔ'me-trɪk dɪ'vɪs )

**bionics** [ENG] The study of systems, particularly electronic systems, which function after the manner of living systems. ( bɪ'ɒn-ɪks )

**BIOS** See basic input/output system.

**biot** See abampere. ( 'bi-ət )

**biotechnical robot** [CONT SYS] A robot that requires the presence of a human operator in order to function. ( ,bi-ɔ'tek-nə-kəl 'rɒ,bɒt )

**biotelemetry** [ENG] The use of telemetry techniques, especially radio waves, to study behavior and physiology of living things. ( ,bi-ɔ'te-ləm-ə-trē )

**bipolar amplifier** [ELECTR] An amplifier capable of supplying a pair of output signals corresponding to the positive or negative polarity of the input signal. ( bɪ'pɔ-lər 'am-plə,fɪ-ər )

**bipolar circuit** [ELECTR] A logic circuit in which zeros and ones are treated in a symmetric or bipolar manner, rather than by the presence or absence of a signal; for example, a balanced arrangement in a square-loop-ferrite magnetic circuit. ( bɪ'pɔ-lər 'sər-kət )

**bipolar electrode** [ELEC] Electrode, without metallic connection with the current supply, one face of which acts as anode surface and the opposite face as a cathode surface when an electric current is passed through a cell. ( bɪ'pɔ-lər 'ɪlek,troʊd )

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**bipolar format** [COMPUT SCI] A method of representing binary data in which 0 bits have zero voltage and each 1 bit has a polarity opposite that of the preceding 1 bit. { 'bī'pō-lər 'fɔr,mæt }

**bipolar integrated circuit** [ELECTR] An integrated circuit in which the principal element is the bipolar junction transistor. { 'bī'pō-lər 'in-tə'grād-əd 'sər-kət }

**bipolar junction transistor** [ELECTR] A bipolar transistor that is composed entirely of one type of semiconductor, silicon. Abbreviated BIT. Also known as silicon homojunction. { 'bī,pōl-ər 'jŋk-shən trānz'is-tər }

**bipolar magnetic driving unit** [ENG ACOUS] Headphone or loudspeaker unit having two magnetic poles acting directly on a flexible iron diaphragm. { 'bī'pō-lər mag'ned-ik 'driv-ŋ 'yü-nət }

**bipolar memory** [COMPUT SCI] A computer memory employing integrated-circuit bipolar junction transistors as bistable memory cells. { 'bī'pō-lər 'mem-rē }

**bipolar power supply** [ELEC] A high-precision, regulated, direct-current power supply that can be set to provide any desired voltage between positive and negative design limits, with a smooth transition from one polarity to the other. { 'bī'pō-lər 'pau-ər sə'plī }

**bipolar signal** [COMMUN] A signal in which different logical states are represented by electrical voltages of opposite polarity. { 'bī'pō-lər 'sig-nəl }

**bipolar spin device** See magnetic switch. { 'bī 'pō-lər 'spɪn dī'vīs }

**bipolar spin switch** See magnetic switch. { 'bī 'pō-lər 'spɪn 'swɪtʃ }

**bipolar transistor** [ELECTR] A transistor that uses both positive and negative charge carriers. { 'bī'pō-lər trānz'is-tər }

**bipolar video** See coherent video. { 'bī'pō-lər 'vid-ē-ō }

**bipotential electrostatic lens** [ELECTR] An electron lens in which image and object space are field-free, but at different potentials; examples are the lenses formed between apertures of cylinders at different potentials. Also known as immersion electrostatic lens. { 'bī,pə'ten-čəl i 'lek-trə'stəd-ik 'lɛnz }

**biquartic filter** [ELECTR] An active filter that uses operational amplifiers in combination with resistors and capacitors to provide infinite values of Q and simple adjustments for band-pass and center frequency. { 'bī'kwɔrd-ik 'fɪl-tər }

**birefringence** [OPTICS] 1. Splitting of a light beam into two components, which travel at different velocities, by a material. 2. For a light beam that has been split into two components by a material, the difference in the indices of refraction of the components within the material. Also known as double refraction. { 'bī-rɪ'frɪn-ʃəns }

**biscuit** See preform. { 'bɪs-kət }

**bistable circuit** [ELECTR] A circuit with two stable states such that the transition between the states cannot be accomplished by self-triggering. { 'bī 'stā-bəl 'sər-kət }

**bistable magnetic core** [ELECTR] A magnetic core that can be in either of two possible states of magnetization. Also known as bimag core. { 'bī 'stā-bəl mag'ned-ik 'kɔr }

**bistable multivibrator** [ELECTR] A multivibrator in which either of the two active devices may remain conducting, with the other nonconducting, until the application of an external pulse. Also known as Eccles-Jordan circuit; Eccles-Jordan multivibrator; flip-flop circuit; trigger circuit. { 'bī'stā-bəl məl-ti'vɪ,bɾəd-ər }

**bistable optical device** [OPTICS] A device which can be in either of two stable states of optical transmission for a single value of the input light intensity. { 'bī'stā-bəl 'ap-tə-kəl dɪ'vɪs }

**bistable unit** [ENG] A physical element that can be made to assume either of two stable states; a binary cell is an example. { 'bī'stā-bəl 'yü-nət }

**bistatic radar** [ENG] Radar in which the transmitter and receiver are not located in the same place; the line between their positions is called the baseline. { 'bī'stəd-ik 'rā,där }

**bisynchronous transmission** [COMMUN] A set of procedures for handling synchronous transmission of data and, in particular, for handling a block of data, called a message format, that is transmitted in a single operation. { 'bī'sɪŋ-krə-nəs trānz'mɪʃ-ən }

**bit** [COMPUT SCI] 1. A unit of information content equal to one binary decision or the designation of one of two possible and equally likely values or states of anything used to store or convey information. 2. A dimensionless unit of storage capacity specifying that the capacity of a storage device is expressed by the logarithm to the base 2 of the number of possible states of the device. { bit }

**bit block transfer** [COMPUT SCI] In computer graphics, a hardware function that moves a rectangular block of bits from the main memory to the display memory at high speed. Abbreviated bitblt. { 'bit ,blæk 'tranz-fər }

**bitblt** See bit block transfer.

**bit buffer unit** [COMMUN] A unit that terminates bit-serial communications lines coming from and going to technical control. { 'bit 'bʌf-ər 'yü-nət }

**bit cone** See roller cone bit. { 'bit ,kɔn }

**bit count appendage** [COMPUT SCI] One of the two-byte elements replacing the parity bit stripped off each byte transferred from main storage to disk volume (the other element is the cyclic check); these two elements are appended to the block during the write operation; on a subsequent read operation these elements are calculated and compared to the appended elements for accuracy. { 'bit ,kaunt ə'pend-ɪj }

**bit density** [COMPUT SCI] Number of bits which can be placed, per unit length, area, or volume, on a storage medium; for example, bits per inch of magnetic tape. Also known as record density. { 'bit 'den-səd-ē }

**bit depth** [COMPUT SCI] In a digital file, the number of colors for an image; calculated as 2 to the power of the bit depth; for example, a bit depth of

## bit flipping

8 supports up to 256 colors, and a bit depth of 24 supports up to 16 million colors. { 'bit ,depth }

**bit flipping** See bit manipulation. { 'bit ,flip-ŋ }

**bit location** [COMPUT SCI] Storage position on a record capable of storing one bit. { 'bit lō'kā-shən }

**bit manipulation** [COMPUT SCI] Changing bits from one state to the other, usually to influence the operation of a computer program. Also known as bit flipping. { 'bit mən,ip-yə'lā,shən }

**bit-mapped font** [COMPUT SCI] A font that is specified by a complete set of dot patterns for each character and symbol. { 'bit ,mæp't fənt }

**bit-mapped graphics** See raster graphics. { 'bit ,mæp't graf-iks }

**bit mapping** [COMPUT SCI] The assignment of each location in a computer's storage to a physical location on an electronic display. { 'bit 'mæp-ŋ }

**bit-oriented protocol** [COMMUN] A communications protocol in which individual bits within a byte are used as control codes. { 'bit ,ōr-ē ,ent-əd 'prōd-ə,kōl }

**bit pattern** [COMPUT SCI] A combination of binary digits arranged in a sequence. { 'bit ,pæd-ərən }

**bit per second** [COMMUN] A unit specifying the instantaneous speed at which a device or channel transmits data. Abbreviated bps. { 'bit pər 'sek-ənd }

**bit position** [COMPUT SCI] The position of a binary digit in a word, generally numbered from the least significant bit. { 'bit pə'zish-ən }

**bit rate** [COMMUN] Quantity, per unit time, of binary digits (or pulses representing them) which will pass a given point on a communications line or channel in a continuous stream. { 'bit ,rāt }

**bit serial** [COMMUN] Sequential transmission of character-forming bits. { 'bit 'sir-ē-əl }

**bit-sliced microprocessor** [COMPUT SCI] A microprocessor in which the major logic of the central processor is partitioned into a set of large-scale-integration circuits, as opposed to being placed on a single chip. { 'bit ,sli:t ,mīkrō'præs-əs-ər }

**bit stream** [COMPUT SCI] 1. A consecutive line of bits transmitted over a circuit in a transmission method in which character separation is accomplished by the terminal equipment. 2. A binary signal without regard to grouping by character. { 'bit ,strēm }

**bit-stream generator** [COMMUN] An algorithmic procedure for producing an unending sequence of binary digits to implement a stream. { 'bit ,strēm 'jen-ə,rād-ər }

**bit string** [COMPUT SCI] A set of consecutive binary digits representing data in coded form, in which the significance of each bit is determined by its position in the sequence and its relation to the other bits. { 'bit ,striŋ }

**bit stuffing** [COMMUN] The insertion of extra bits in a transmitted message in order to fill a frame to a fixed size or to break up a pattern of bits that could be mistaken for control codes. { 'bit ,stɒf-ŋ }

**bit synchronization** [COMMUN] Element of a message header used to synchronize all of the bits and characters that follow. { 'bit ,sɪŋ-krə-nə'zā-shən }

**bit test** [COMPUT SCI] A check by a computer program to determine the status of a particular bit. { 'bit ,test }

**bit zone** [COMPUT SCI] 1. One of the two left-most bits in a commonly used system in which six bits are used for each character, related to overpunch. 2. Any bit in a group of bit positions that are used to indicate a specific class of items; for example, numbers, letters, special signs, and commands. { 'bit ,zōn }

**BJT** See bipolar junction transistor.

**BL** See base line.

**black** See black signal. { blæk }

**black-and-white television** See monochrome television. { 'blæk ən ,wɪt 'tel-ə,vɪz-ən }

**black box** [ENCL] Any component, usually electronic and having known input and output, that can be readily inserted into or removed from a specific place in a larger system without knowledge of the component's detailed internal structure. { 'blæk ,bɒks }

**blacker-than-black level** [COMMUN] In television, a level of greater instantaneous amplitude than the black level, used for synchronization and control signals. { 'blæk-ər θən 'blæk ,lev-əl }

**black hole** See stale link. { 'blæk 'hōl }

**black level** [ELECTR] The level of the television picture signal corresponding to the maximum limit of black peaks. { 'blæk ,lev-əl }

**blackout** See radio blackout. { 'blæk,aʊt }

**black peak** [COMMUN] A peak excursion of the television picture signal in the black direction. { 'blæk ,pēk }

**black scope** [ELECTR] Cathode-ray tube operating at the threshold of luminescence when no video signals are being applied. { 'blæk 'skɒp }

**black signal** [COMMUN] Signal at any point in a facsimile system produced by the scanning of a maximum density area of the subject copy. Also known as black; picture black. { 'blæk ,sɪg-nəl }

**black-surface field** [ELECTR] A layer of  $p^+$  material which is applied to the back surface of a solar cell to reduce hole-electron recombinations there and thereby increase the cell's efficiency. { 'blæk ,sər-fæs ,fi:ld }

**black transmission** [COMMUN] The amplitude-modulated transmission of facsimile signals in which the maximum signal amplitude corresponds to the greatest copy density or darkest shade. { 'blæk træn'zɪmɪʃ-ən }

**blade** [ELEC] A flat moving conductor in a switch. { blād }

**blank** [ELECTR] To cut off the electron beam of a television picture tube or camera tube during the process of retrace by applying a rectangular pulse voltage to the grid or cathode during each retrace interval. Also known as beam blank. { blæŋk }

**blank cell** [COMPUT SCI] A cell of a spreadsheet that contains no text or numeric values, and for which no formatting is specified other than the global formats of the spreadsheet. { 'blæŋk ,sel }

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**blank character** [COMPUT SCI] A character, either printed or appearing as a blank, used to denote a blank space among printed characters. Also known as space character. { 'blæŋk 'kær-ik-tər }

**blanketing** [COMMUN] Interference due to a nearby transmitter whose signals are so strong that they override other signals over a wide band of frequencies. { 'blæŋk-ŋg }  
See blank medium. { 'blæŋk ,fōrm }

**blanking** [ELECTR] The act, useful in adapting a radar to its environment, of disabling selected apparatus at specified times or of deleting certain data from further treatment. { 'blæŋk-ŋg }

**blanking circuit** [ELECTR] A circuit preventing the transmission of brightness variations during the horizontal and vertical retrace intervals in television scanning. { 'blæŋk-ŋg ,sər-kət }

**blanking level** [ELECTR] The level that separates picture information from synchronizing information in a composite television picture signal; coincides with the level of the base of the synchronizing pulses. Also known as pedestal, pedestal level. { 'blæŋk-ŋg ,lev-əl }

**blanking pulse** [ELECTR] A control pulse used to switch off a part of a television or radar set electronically for a predetermined length of time. { 'blæŋk-ŋg ,pʌls }

**blanking signal** [ELECTR] The signal rendering the return trace invisible on the picture tube of a television receiver. { 'blæŋk-ŋg ,sig-nəl }

**blanking time** [ELECTR] The length of time that the electron beam of a cathode-ray tube is shut off. { 'blæŋk-ŋg ,tīm }

**blank medium** [COMPUT SCI] An empty position on the medium concerned, such as a column without holes on a punch tape, used to indicate a blank character. Also known as blank form. { 'blæŋk 'mēd-ĭ-əm }

**blank tape** [COMPUT SCI] A portion of a paper tape having sprocket holes only, to indicate a blank character. { 'blæŋk 'tæp }

**blank tape halting problem** [COMPUT SCI] The problem of finding an algorithm that, for any Turing machine, decides whether the machine eventually stops if it started on an empty tape; it has been proved that no such algorithm exists. { 'blæŋk 'tæp 'hōl-tŋŋ ,prəb-ləm }

**blast** [COMPUT SCI] To release internal or external memory areas from the control of a computer program in the course of dynamic storage allocation, making these areas available for reallocation to other programs. { 'blæst }

**blast freezer** [ENG] An upright freezer in which very cold air circulated by blowers is used for rapid freezing of food. { 'blæst ,frē-zər }

**bleed** [COMPUT SCI] In optical character recognition, the flow of ink in printed characters beyond the limits specified for their recognition by a character reader. { 'blēd }

**bleeder** [ELECTR] A high resistance connected across the dc output of a high-voltage power supply which serves to discharge the filter capacitors after the power supply has been turned off, and to provide a stabilizing load. { 'blēd-ər }

**bleeder current** [ELEC] Current drawn continuously from a voltage source to lessen the effect of load changes or to provide a voltage drop across a resistor. { 'blēd-ər ,kər-ənt }

**bleeder resistor** [ELEC] A resistor connected across a power pack or other voltage source to improve voltage regulation by drawing a fixed current value continuously; also used to dissipate the charge remaining in filter capacitors when equipment is turned off. { 'blēd-ər ,rɪ'zɪs-tər }

**blended data** [ENG] O point that is the combination of scan data and track data to form a vector. { 'blen-dəd 'dād-ə }

**blend to analog** [COMMUN] The point at which the block error rate of an AM/FM IBOC receiver falls below some predefined threshold and the digital audio is faded out while simultaneously the analog audio is faded in, preventing the received audio from simply muting when the digital signal is lost. The received audio will also blend to digital upon reacquisition of the digital signal. { 'blend tə 'an-əl-əg }

**blend to mono** [COMMUN] The process of progressively attenuating the left-right component of a stereo decoded signal as the received radio frequency signal decreases, with the net result of lowering the audible noise. { 'blend tə 'mān-ō }

**BLER** See block error rate.

**blind approach beacon system** [NAV] A pulse-type, ground-based navigation beacon used for runway approach at airports, which sends out signals that produce range and runway position information on the L-scan cathode-ray indicator of an aircraft making an instrument approach. Also known as beam approach beacon system (British usage). Abbreviated babcs. { 'blɪnd ə'prəʊtʃ 'bē-kən ,sɪs-təm }

**blind controller system** [CONT SYS] A process control arrangement that separates the in-plant measuring points (for example, pressure, temperature, and flow rate) and control points (for example, a valve actuator) from the recorder or indicator at the central control panel. { 'blɪnd kən'trɒl-ər ,sɪs-təm }

**blind drilling** [ENG] Drilling in which the drilling fluid is not returned to the surface. { 'blɪnd 'drɪl-ŋŋ }

**blind flange** [ENG] A flange used to close the end of a pipe. { 'blɪnd 'flaŋŋ }

**blind hole** [ENG] A hole which does not pass completely through a workpiece. [ENG] A type of borehole that does not have the drilling mud or other circulating medium carry the cuttings to the surface. { 'blɪnd 'hōl }

**blinding** [ENG] 1. A thin layer of lean concrete, fine gravel, or sand that is applied to a surface to smooth over voids in order to provide a cleaner, drier, or more durable finish. 2. A layer of small rock chips applied over the surface of a freshly tarred road. 3. See blanking. { 'blɪn-dŋŋ }

**blind joint** [ENG] A joint which is not visible from any angle. { 'blɪnd 'dʒɔɪnt }

## blind spot

**blind spot** [ENG] An area on a filter screen where no filtering occurs. Also known as dead area. { 'blɪnd ,spɒt }

**blind zone** [COMMUN] Area from which echoes cannot be received; generally, an area shielded from the transmitter by some natural obstruction and therefore from which there can be no return. { 'blɪnd ,zɔ:n }

**B line** See index register. { 'bi: ,li:n }

**blinking** [COMMUN] Method of providing information in pulse systems by modifying the signal at its source so that signal presentation on the display scope alternately appears and disappears; in loran, this indicates that a station is malfunctioning. [ELECTR] Electronic-attack technique employed by two aircraft separated by a short distance and not resolved in azimuth so as to appear as one target to a tracking radar; the two aircraft alternately spot-jam, causing the radar system to oscillate from one place to another, greatly degrading the fire-control accuracy. [NAV] Regular shifting right and left or alternate appearance and disappearance of a loran signal to indicate that the signals of a pair of stations are out of synchronization. { 'blɪŋ -kiŋ }

**blip** [ELECTR] The display of a received pulse on the screen of a cathode-ray tube. Also known as pip. { 'bli:p }

**blip-scan ratio** [ELECTR] The ratio of the number of times a target is detected (a contact generated, or a display clearly evident) to the number of times of opportunities to do so provided by the radar routine; provides a rough estimate of the probability of detection occurring during the detection process. { 'bli:p ,skan 'rɑ: -ʃə }  
**bloatware** See fatware. { 'bləʊ ,wer }

**BLOB** See binary large object. { 'blɒb or 'bɛlə }  
{ 'ɒ'bɛ }

**block** [COMMUN] An 8-by-8 array of pel values or discrete cosine transform coefficients representing luminance or chrominance information. [COMPUT SCI] A group of information units (such as records, words, characters, or digits) that are transported or considered as a single unit by virtue of their being stored in successive storage locations; for example, a group of logical records constituting a physical record. { 'blɒk }

**block body** [COMPUT SCI] A list of statements that follows the block head in a computer program with block structure. { 'blɒk ,bɔ:d -ɛ }

**block chaining** See chained block encryption. { 'blɒk ,tʃeɪn -ɪŋ }

**block check character** [COMMUN] A character that is added to a block of data to check its accuracy, and consists of parity bits each of which is set by observing a specified set of bits in the block. { 'blɒk 'tʃek ,kɑ: -ɪk -tər }

**block cipher** [COMMUN] A cipher that transforms a string of input bits of fixed length into a string of output bits of fixed length. { 'blɒk ,sɪ -fər }

**block code** [COMMUN] An error-correcting code generated by an encoder that produces a fixed-length code word with each incoming fixed-length message block. { 'blɒk ,kɔ:d }

**block data** [COMPUT SCI] A statement in FORTRAN which declares that the program following is a data specification subprogram. { 'blɒk ,dɑ:d -ə }

**block diagram** [ENG] A diagram in which the essential units of any system are drawn in the form of rectangles or blocks and their relation to each other is indicated by appropriate connecting lines. { 'blɒk ,di: -ə ,grɑ:m }

**blocked F-format data set** See FB data set. { 'blɒk 'ef'fɔ: ,mɑ:t 'dɑ:d -ə ,set }

**blocked impedance** [ELEC] The impedance at the input of a transducer when the impedance of the output system is made infinite, as by blocking or clamping the mechanical system. { 'blɒk 'ɪm'pi: -dəns }

**blocked impurity band detector** [ELECTR] A detector of long-wavelength infrared radiation consisting of a heavily doped extrinsic photoconductor on which an undoped intrinsic layer is grown epitaxially to prevent dark current from flowing in the impurity band. { 'blɒk 'ɪm'py: -əd -ɛ 'bænd ,di: ,te:k -tər }

**blocked process** [COMPUT SCI] A program that is running on a computer but is temporarily prevented from making progress because it requires some resource (such as a printer or user input) that is not immediately available. { 'blɒk 'prɔ: ,ses }

**blocked resistance** [ENG ACOUS] Resistance of an audio-frequency transducer when its moving elements are blocked so they cannot move; represents the resistance due only to electrical losses. { 'blɒk 'ri: -zɪs -təns }

**block encryption** [COMMUN] The use of a block cipher, usually employing the data encryption standard (DES), in which each 64-bit block of data is enciphered or deciphered separately, and every bit in a given output block depends on every bit in its respective input block and on every bit in the key, but on no other bits. Also known as electronic codebook mode (ECB). { 'blɒk en'kri: -ʃən }

**block error rate** [COMMUN] A ratio of the number of data blocks received with at least one uncorrectable bit to the total number of blocks received. Abbreviated BLER. { 'blɒk 'er -ər ,ræt }

**blockette** [COMPUT SCI] A subdivision of a group of consecutive machine words transferred as a unit, particularly with reference to input and output. { 'blɒk'et }

**block head** [COMPUT SCI] A list of declarations at the beginning of a computer program with block structure. { 'blɒk 'hed }

**block identifier** [COMPUT SCI] A means of identifying an area of storage in FORTRAN so that this area may be shared by a program and its subprograms. { 'blɒk 'ɪden -tə ,fɪ -ər }

**block ignore character** [COMPUT SCI] A character associated with a block which indicates the presence of errors in the block. { 'blɒk 'i: -nɔ: ,kɑ: -ɪk -tər }

**blocking** [COMPUT SCI] Combining two or more computer records into one block. [ELECTR] 1. Applying a high negative bias to the grid of

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two or more ck. [ELECTR] o the grid of

an electron tube to reduce its anode current to zero. **2.** Overloading a receiver by an unwanted signal so that the automatic gain control reduces the response to a desired signal. **3.** Distortion occurring in a resistance-capacitance-coupled electron tube amplifier stage when grid current flows in the following tube. { 'bläk-ig }

**blocking capacitor** See coupling capacitor. { 'bläk-ig kə'pas-əd-ər }

**blocking factor** [COMPUT SCI] The largest possible number of records of a given size that can be contained within a single block. { 'bläk-ig ,fak-tər }

**blocking layer** See depletion layer. { 'bläk-ig ,lā-ər }

**blocking oscillator** [ELECTR] A relaxation oscillator that generates a short-time-duration pulse by using a single transistor or electron tube and associated circuitry. Also known as squegger; squegging oscillator. { 'bläk-ig 'äs-ə,lād-ər }

**blocking oscillator driver** [ELECTR] Circuit which develops a square pulse used to drive the modulator tubes, and which usually contains a line-controlled blocking oscillator that shapes the pulse into the square wave. { 'bläk-ig 'äs-ə ,lād-ər 'drī-vər }

**block input** [COMPUT SCI] **1.** A block of computer words considered as a unit and intended or destined to be transferred from an internal storage medium to an external destination. **2.** See output area. { 'bläk 'in,pūt }

**block length** [COMPUT SCI] The total number of records, words, or characters contained in one block. { 'bläk ,legkth }

**block loading** [COMPUT SCI] A program loading technique in which the control sections of a program or program segment are loaded into contiguous positions in main memory. { 'bläk ,lōd-ig }

**block mark** [COMPUT SCI] A special character that indicates the end of a block. { 'bläk ,märk }

**block move** See cut and paste. { 'bläk 'müv }

**block multiplexor channel** [COMPUT SCI] A transmission channel in a computer system that can simultaneously transmit blocks of data from several high-speed input/output devices by interleaving the data. { 'bläk 'mält-i ,plek-sər ,chan-əl }

**block operation** [COMPUT SCI] An editing or formatting procedure that is carried out on a selected block of text in a word-processing document. { 'bläk ,äp-ə'rā-shən }

**block parity** [COMMUN] An error-checking technique involving the comparison of a transmitted block check character with one calculated by the receiving device. { 'bläk 'pär-əd-ē }

**block protection** [COMPUT SCI] An instruction in a word-processing or page-layout program that prevents a soft page break from being inserted in a specified block of text, ensuring against a bad page break. { 'bläk prə'tek-shən }

**block protector** [ELEC] Rectangular piece of carbon, bakelite with a metal insert, or porcelain with a carbon insert which, in combination with

each other, make one element of a protector; they form a gap which will break down and provide a path to ground for excessive voltages. { 'bläk prə'tek-tər }

**block signal system** [CONT SYS] An automatic railroad traffic control system in which the track is sectionalized into electrical circuits to detect the presence of trains, engines, or cars. { 'bläk 'sig-nəl ,sis-təm }

**block standby** [COMPUT SCI] Locations always set aside in storage for communication with buffers in order to make more efficient use of such buffers. { 'bläk ,stand,bī }

**block structure** [COMPUT SCI] In computer programming, a conceptual tool used to group sequences of statements into single compound statements and to allow the programmer explicit control over the scope of the program variables. { 'bläk ,strək-chər }

**block transfer** [COMPUT SCI] The movement of data in blocks instead of by individual records. { 'bläk {trans-fər }

**blooming** [ELECTR] **1.** Defocusing of television picture areas where excessive brightness results in enlargement of spot size and halation of the fluorescent screen. **2.** An increase in radar display spot size due to a particularly strong signal exciting the phosphorus material. **3.** The wide spatial dispersion of chaff after being dispensed in small bundles. { 'blüm-ig }

**blow** [COMPUT SCI] To write data or code into a programmable read-only memory chip by melting the fuse links corresponding to bits that are to be zero. { blō }

**blow-lifting gripper** [CONT SYS] A robot component that uses compressed air to lift objects. { 'blō ,lift-ig ,grip-ər }

**blown-fuse indicator** [ELEC] A neon warning light connected across a fuse so that it lights when the fuse is blown. { 'blōn ,fyüz 'in-də ,kād-ər }

**blowout** [ELEC] The melting of an electric fuse because of excessive current. { 'blō ,aüt }

**blow up** See abend. { 'blō ,əp }

**blue glow** [ELECTR] A glow normally seen in electron tubes containing mercury vapor, due to ionization of the mercury molecules. { 'blü ,glō }

**Bluetooth** [COMMUN] A technical specification for the wireless connection over short distances of digital devices, such as cellular telephones, portable computers, and computer peripheral equipment, utilizing the unlicensed 2.4-GHz radio frequency spectrum. { 'blü,túth }

**BNC connector** [ELEC] A small device for connecting coaxial cables, used frequently in low-power, radio-frequency and test applications. Abbreviation for bayonet Neil-Concelman connector. { ,bē,en'sē kə,nek-tər }

**BNF** See Backus-Naur form.

**Board of Trade unit** See kilowatt-hour. { 'bōrd əv 'trād ,yü-nət }

**bobbing** [ELECTR] Fluctuation of the strength of a radar echo and its display, due to alternate constructive and destructive interference of the

## bobtail curtain antenna

- received signal as in a multipath propagation situation. { 'bäb-ij }
- bobtail curtain antenna** [ELECTROMAG] A bidirectional, vertically polarized, phased-array antenna that has two horizontal sections, each 0.5 electrical wavelength long, that connect three vertical sections, each 0.25 electrical wavelength long. { 'bäb,täl 'kört-ən an,ten-ə }
- Bode diagram** [ELECTR] A diagram in which the phase shift or the gain of an amplifier, a servomechanism, or other device is plotted against frequency to show frequency response; logarithmic scales are customarily used for gain and frequency. { 'böd ,dī-ə,gram }
- body capacitance** [ELEC] Capacitance existing between the human hand or body and a circuit. { 'bäd-ē kə'pas-ə-təns }
- body rotation** [CONT SYS] An axis of motion of a pick-and-place robot. { 'bäd-e rō,tā-shən }
- Boersch effect** [ELECTR] The deviation of the energy distribution of electrons emitted from a cathode from a Maxwellian distribution, due to broadening of the distribution by a space-charge region in front of the cathode. { 'bersh i,fekt }
- boller plate** [COMPUT SCI] A commonly used expression or phrase that is stored in memory and can be copied into a word-processing document as needed. { 'böil-ər ,plät }
- biograph** [ENG] Any graphical record made by a bolometer; in particular, a graph formed by directing a pencil of light reflected from the galvanometer of the bolometer at a moving photographic film. { 'böl-ə,graf }
- bolometer** [ENG] An instrument that measures the energy of electromagnetic radiation in certain wavelength regions by utilizing the change in resistance of a thin conductor caused by the heating effect of the radiation. Also known as thermal detector. { bə'läm-əd-ər }
- bomb** Sæ abend. { bäm }
- bombardment** [ELECTR] The use of induction heating to heat electrodes of electron tubes to drive out gases during evacuation. { bäm'bärd-mənt }
- bond** [ELEC] The connection made by bonding electrically. { bänd }
- bonded NR diode** [ELECTR] An  $n^+p$  junction semiconductor device in which the negative resistance arises from a combination of avalanche breakdown and conductivity modulation which is due to the current flow through the junction. { 'bän-dəd ,en'är 'dī,öd }
- bonded strain gage** [ENG] A strain gage in which the resistance element is a fine wire, usually in zigzag form, embedded in an insulating backing material, such as impregnated paper or plastic, which is cemented to the pressure-sensing element. { 'bän-dəd 'strän ,gāj }
- bonded transducer** [ENG] A transducer which employs a bonded strain gage for sensing pressure. { 'bän-dəd tranz'dü-sər }
- bonding** [ELEC] The use of low-resistance material to connect electrically a chassis, metal shield cans, cable shielding braid, and other supposedly equipotential points to eliminate undesirable electrical interaction resulting from high-impedance paths between them. [ENG] 1. The fastening together of two components of a device by means of adhesives, as in anchoring the copper foil of printed wiring to an insulating baseboard. 2. See cladding. { 'bän-dig }
- bonding pad** [ELECTR] A metallized area on the surface of a semiconductor device, to which connections can be made. { 'bän-dig ,pad }
- bonding wire** [ELEC] Wire used to connect metal objects so they have the same potential (usually ground potential). { 'bän-dig ,wīr }
- bond strength** [ENG] The amount of adhesion between bonded surfaces measured in terms of the stress required to separate a layer of material from the base to which it is bonded. { 'bänd ,streŋkθ }
- Bönlng effect** [ELEC] The displacement of associated ions that have been bound to capturing ions in fine channels in a dielectric medium when an electric field is applied. { 'bän-ij i,fekt }
- Book A** Sæ DVD-read-only. { 'bük 'ä }
- Book B** Sæ DVD-video. { 'bük 'bē }
- book capacitor** [ELEC] A trimmer capacitor consisting of two plates which are hinged at one end; capacitance is varied by changing the angle between them. { 'bük kə'pas-əd-ər }
- Book D** Sæ DVD-write once. { 'bük 'dē }
- Book E** Sæ DVD-rewritable. { 'bük 'ē }
- bookkeeping operation** [COMPUT SCI] A computer operation which does not directly contribute to the result, that is, arithmetical, logical, and transfer operations used in modifying the address section of other instructions in counting cycles and in rearranging data. Also known as red-tape operation. { 'bük,kēp-ij əp-ə'rā-shən }
- bookmark** [COMPUT SCI] 1. Any method of halting the processing of a transaction and holding it, as far as it has been completed, until processing resumes. 2. A code that is inserted at a particular place in a document or that is associated with a particular document so that the user can easily return to the specified insertion point or document. 3. A Web page location (URL) which is saved by a user for quick reference. { 'bük ,märk }
- Boolean** [COMPUT SCI] A scalar declaration in ALGOL defining variables similar to FORTRAN's logical variables. { 'bü-lē-ən }
- Boolean algebra** [MATH] An algebraic system with two binary operations and one unary operation important in representing a two-valued logic. { 'bü-lē-ən 'al-jə-brə }
- Boolean calculus** [MATH] Boolean algebra modified to include the element of time. { 'bü-lē-ən 'kal-kyə-ləs }
- Boolean data type** Sæ logical data type. { 'bü-lē-ən 'dad-ə ,tīp }
- Boolean determinant** [MATH] A function defined on Boolean matrices which depends on the elements of the matrix in a manner analogous to the manner in which an ordinary determinant depends on the elements of an ordinary matrix, with the operation of multiplication replaced

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replaced by union. { |bü-l-ä-ön d'i'tär-mä-nänt }

**Boolean function** [MATH] A function  $f(x, y, \dots, z)$   
assembled by the application of the operations  
AND, OR, NOT on the variables  $x, y, \dots, z$  and  
elements whose common domain is a Boolean  
algebra. { |bü-l-ä-ön 'fängk-shän }

**Boolean matrix** [MATH] A rectangular array of  
elements each of which is a member of a Boolean  
algebra. { |bü-l-ä-ön 'mä,tri:ks }

**Boolean operation table** [MATH] A table which  
indicates, for a particular operation on a Boolean  
algebra, the values that result for all possible  
combination of values of the operands; used par-  
ticularly with Boolean algebras of two elements  
which may be interpreted as "true" and "false."  
{ |bü-l-ä-ön 'äp-ä'rä-shän ,tä-bäl }

**Boolean operator** [MATH] A logic operator that is  
one of the operators AND, OR, or NOT, or can  
be expressed as a combination of these three  
operators. { |bü-l-ä-ön 'äp-ä,räd-är }

**Boolean ring** [MATH] A commutative ring with the  
property that for every element  $a$  of the ring,  $a \times$   
 $a$  and  $a + a = 0$ , it can be shown to be equivalent  
to a Boolean algebra. { |bü-l-ä-ön 'ring }

**Boolean search** [COMPUT SCI] A search for se-  
lected information, that is, information satisfying  
conditions that can be expressed by AND, OR,  
and NOT functions. { |bü-l-ä-ön 'särch }

**boost** [ELECTR] To augment in relative intensity,  
as to boost the bass response in an audio system.  
{ 'büst }

**boost charge** [ELEC] Partial charge of a storage  
battery, usually at a high current rate for a short  
period. { 'büst ,chärj }

**booster** [ELEC] A small generator inserted in  
series or parallel with a larger generator to  
maintain normal voltage output under heavy  
loads. [ELECTR] 1. A separate radio-frequency  
amplifier connected between an antenna and  
a television receiver to amplify weak signals.  
2. A radio-frequency amplifier that amplifies and  
rebroadcasts a received television or communi-  
cation radio carrier frequency for reception by the  
general public. { 'büs-tär }

**booster battery** [ELECTR] A battery which in-  
creases the sensitivity of a crystal detector by  
maintaining a certain voltage across it and  
thereby adjusting conditions to increase the  
response to a given input. { 'büs-tär ,bäd-ä-rē }

**booster voltage** [ELECTR] The additional voltage  
supplied by the damper circuit to the horizontal  
output, horizontal oscillator, and vertical output  
circuits of a television receiver to give greater  
sawtooth sweep output. { 'büs-tär ,völ-tij }

**boot** [COMPUT SCI] To load the operating sys-  
tem into a computer after it has been swi-

tched on; usually applied to small computers.  
{ 'bü }  
**boot button** See bootstrap button. { 'bü't ,bät-än }

**boot record** [COMPUT SCI] A special area of a  
floppy diskette or hard drive which is used by  
the computer during system startup. { 'bü't  
,rek-örd }

**bootstrap** [COMPUT SCI] The procedures for mak-  
ing a computer or a program function through  
its own actions. [ENG] A technique or device  
designed to bring itself into a desired state by  
means of its own action. { 'bü't,strap }

**bootstrap button** [COMPUT SCI] The first button  
pressed when a computer is turned on, causing  
the operating system to be loaded into memory.  
Also known as boot button, initial program load  
button, IPL button. { 'bü't,strap ,bät-än }

**bootstrap circuit** [ELECTR] A single-stage ampli-  
fier in which the output load is connected  
between the negative end of the anode supply  
and the cathode, while signal voltage is applied  
between grid and cathode; a change in grid  
voltage changes the input signal voltage with  
respect to ground by an amount equal to the  
output signal voltage. { 'bü't,strap ,sär-kät }

**bootstrap driver** [ELECTR] Electronic circuit used  
to produce a square pulse to drive the modulator  
tube; the duration of the square pulse is de-  
termined by a pulse-forming line. { 'bü't ,strap  
,driv-är }

**bootstrap instructor technique** [COMPUT SCI] A  
technique permitting a system to bring itself into  
an operational state by means of its own action.  
Also known as bootstrap technique. { 'bü't  
,strap in'sträk-tör tek'nēk }

**bootstrap integrator** [ELECTR] A bootstrap saw-  
tooth generator in which an integrating amplifier  
is used in the circuit. Also known as Miller  
generator. { 'bü't,strap 'in-tä,gräd-är }

**bootstrap loader** [COMPUT SCI] A very short pro-  
gram loading routine, used for loading other  
loaders in a computer, often implemented in a  
read-only memory. { 'bü't,strap 'löd-är }

**bootstrap memory** [COMPUT SCI] A device that  
provides for the automatic input of new programs  
without erasing the basic instructions in the  
computer. { 'bü't,strap 'mem-rē }

**bootstrapping** [ELECTR] A technique for lifting a  
generator circuit above ground by a voltage  
value derived from its own output signal. { 'bü't  
,strap-ij }

**bootstrap program** See loading program. { 'bü't  
,strap ,prö-gram }

**bootstrap sawtooth generator** [ELECTR] A circuit  
capable of generating a highly linear positive  
sawtooth waveform through the use of bootstrap-  
ping. { |bü't,strap 'sö,tüth 'jen-ä,räd-är }

**bootstrap technique** See bootstrap instructor  
technique. { 'bü't,strap tek'nēk }

**boot virus** [COMPUT SCI] A virus that infects the  
boot records on floppy diskettes and hard drives  
and is designed to self-replicate from one disk to  
another. { 'bü't ,vī-räs }



## boresighting

**boresighting** [ENCL] Initial alignment of a directional microwave or radar antenna system by using an optical procedure or a fixed target at a known location. { 'bɔːr,sɪd-ɪŋ }

**BORSCHT** [COMMUN] An interface circuit between ordinary telephone lines carrying analog voice signals and digital time-division multiplex facilities, which digitizes voice signals, assigns them time slots, and then multiplexes them. Acronym for battery, overvoltage, ringing, supervision, coding, hybrid and test access. { bɔːrsɪt }

**bottleneck analysis** [COMPUT SCI] A detailed study of the manner in which elements of a computer system are related to find out where bottlenecks arise, so that the system's performance can be improved. { 'bɒt-əl,nek ə ,næl-ə-səs }

**bottle thermometer** [ENG] A thermoelectric thermometer used for measuring air temperature; the name is derived from the fact that the reference thermocouple is placed in an insulated bottle. { 'bɒt-əl θər'mi:tər-ɪ-ɔːr }

**bottom** [COMPUT SCI] The termination of a file. { 'bɒt-əm }

**bottom-up analysis** [COMPUT SCI] A reductive method of syntactic analysis which attempts to reduce a string to a root symbol. { 'bɒt-əm-ʌp ə ,næl-ə-səs }

**bounced message** [COMPUT SCI] An electronic mail message that is returned to sender because attempts to deliver it have been unsuccessful. { ,bəʊnst 'mes-ɪdʒ }

**boundary** [ELECTR] An interface between p- and n-type semiconductor materials, at which donor and acceptor concentrations are equal. { 'bəʊn-drɪ }

**boundary-layer photocell** See photovoltaic cell. { 'bəʊn-drɪ ,lɛ-ər 'fɒ-də,sel }

**bound charge** [ELEC] Electric charge which is confined to atoms or molecules, in contrast to free charge, such as metallic conduction electrons, which is not. Also known as polarization charge. { 'baʊnd 'tʃɑːrʒ }

**bounds register** [COMPUT SCI] A device which stores the upper and lower bounds on addresses in the memory of a given computer program in a time-sharing system. { 'bəʊnz ,reɪ-ə-star }

**Bourne shell** [COMPUT SCI] The original Unix shell. { 'bɔːn ,ʃel }

**bowtie antenna** [ELECTROMAG] An antenna that consists of two triangular pieces of stiff wire or two triangular flat metal plates, arranged in the configuration of a bowtie, with the feed point at the gap between the apexes of the triangles. { 'bəʊ,tɪ ən,ten-ə }

**boxcar** [COMMUN] One of a series of long signal-wave pulses which are separated by very short intervals of time. { 'bɒks,kɑːr }

**boxcar circuit** [ELECTR] A circuit used in radar for sampling voltage waveforms and storing the latest value sampled; the term is derived from the flat, steplike segments of the output voltage waveform. { 'bɒks,kɑːr ,sɜːkət }

**B-pictures** See bidirectional pictures. { 'bi 'pɪk-tʃəz }

**B power supply** See B supply. { 'bi 'paʊ-ər ,sə-plɪ }

**bps** See bit per second.

**BPSK** See binary phase-shift keying.

**brachiating motion** [CONTR SYS] A type of robotic motion that employs legs or other equipment to help the manipulator move in its working environment. { 'bræ-kɪ'eɪ-ɪŋ 'mɔː-shən }

**brachiating robot** [CONTR SYS] A robot that is capable of moving over the surface of an object. { 'bræ-kɪ'eɪ-ɪŋ 'rɒ,bɒt }

**Bragg cell** See acoustooptic modulator. { 'bræg ,sel }

**braided wire** [ELEC] A tube of fine wires woven around a conductor or cable for shielding purposes or used alone in flattened form as a grounding strap. { 'bræɪ-d əd ,wɪr }

**branch** [COMPUT SCI] 1. Any one of a number of instruction sequences in a program to which computer control is passed, depending upon the status of one or more variables. 2. See jump. [ELEC] A portion of a network consisting of one or more two-terminal elements in series. Also known as arm. { 'bræntʃ }

**branch circuit** [ELEC] A portion of a wiring system in the interior of a structure that extends from a final overload protective device to a plug receptacle or a load such as a lighting fixture, motor or heater. { 'bræntʃ 'sɜːkət }

**branch-circuit distribution center** [ELEC] Distribution center at which branch circuits are supplied. { 'bræntʃ 'sɜːkət dɪ-strɪ'bjuː-shən ,sɛn-tər }

**branch cutout** [ELEC] The holder for a fuse that protects a branch circuit in an interior wiring system. { 'bræntʃ 'kʌt,aʊt }

**branch gain** See branch transmittance. { 'bræntʃ ,gæn }

**branching** [COMPUT SCI] The selection, under control of a computer program, of one of two or more branches. { 'bræntʃ-ɪŋ }

**branch instruction** [COMPUT SCI] An instruction that makes the computer choose between alternative subprograms, depending on the conditions determined by the computer during the execution of the program. { 'bræntʃ ɪn'strʌk-shən }

**branch joint** [ELEC] Joint used for connecting a branch conductor or cable, where the latter continues beyond the branch. { 'bræntʃ ,jɔɪnt }

**branch point** [COMPUT SCI] A point in a computer program at which there is a branch instruction. [ELEC] A terminal in an electrical network that is common to more than two elements or parts of elements of the network. Also known as junction point, node. { 'bræntʃ ,pɔɪnt }

**branch prediction** [COMPUT SCI] A method whereby a processor guesses the outcome of a branch instruction so that it can prepare in advance to carry out the instructions that follow the predicted outcome. { 'bræntʃ prɪ'dɪk-shən }

**branch transmittance** [CONTR SYS] The amplification of current or voltage in a branch of an electrical network; used in the representation of such a network by a signal-flow graph. Also known as branch gain. { 'bræntʃ træn'smɪt-əns }

'bē 'paü-ər

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**Branley-Lenard effect** [ELECTR] The strong ionization of air and other gases by ultraviolet radiation with wavelengths in the range 120–150 nanometers. { 'brän-lē 'len-ər-d i, fekt }

**Braun tube** See cathode-ray tube. { 'braün ,tüb }

**breadboard** [ELECTR] A printed circuit board designed so that the user can mount and wire whatever circuitry is desired. { 'bred,bórd }

**breadboarding** [ELECTR] Assembling an electronic circuit in the most convenient manner, without regard for final locations of components, to prove the feasibility of the circuit and to facilitate changes when necessary. { 'bred,bórd-ıng }

**breadboard model** [ENG] Uncased assembly of an instrument or other piece of equipment, such as a radio set, having its parts laid out on a flat surface and connected together to permit a check or demonstration of its operation. { 'bred,bórd 'mäd-əl }

**break** [COMPUT SCI] 1. To interrupt processing by a computer, usually by depressing a key. 2. A place in a file of records where one or more of the values in the records change. { 'bräk }

**break-before-make contact** [ELEC] One of a pair of contacts that interrupt one circuit before establishing another. { 'bräk bə,'fór 'mäk 'kän ,takt }

**break contact** [ELEC] The contact of a switching device which opens a circuit upon the operation of the device. { 'bräk ,kän,takt }

**breakdown** [ELEC] A large, usually abrupt rise in electric current in the presence of a small increase in voltage; can occur in a confined gas between two electrodes, a gas tube, the atmosphere (as lightning), an electrical insulator, and a reverse-biased semiconductor diode. Also known as electrical breakdown. { 'bräk ,daün }

**breakdown diode** [ELEC] A semiconductor diode in which the reverse-voltage breakdown mechanism is based either on the Zener effect or the avalanche effect. { 'bräk ,daün'di,öd }

**breakdown impedance** [ELECTR] Of a semiconductor, the small-signal impedance at a specified direct current in the breakdown region. { 'bräk ,daün im'péd-əns }

**breakdown potential** See breakdown voltage. { 'bräk ,daün pə'ten-shəl }

**breakdown region** [ELECTR] Of a semiconductor diode, the entire region of the volt-ampere characteristic beyond the initiation of breakdown for increasing magnitude of bias. { 'bräk ,daün ,rē-jən }

**breakdown torque** [ELEC] The maximum torque that a motor can develop at its rated applied voltage and frequency without an abrupt drop in speed. { 'bräk ,daün ,törk }

**breakdown voltage** [ELEC] 1. The voltage measured at a specified current in the electrical breakdown region of a semiconductor diode. Also known as Zener voltage. 2. The voltage at which an electrical breakdown occurs in a dielectric. 3. The voltage at which an electrical breakdown occurs in a gas. Also known as breakdown potential; sparking potential, sparking voltage. { 'bräk ,daün ,vól-tij }

**breaker-and-a-half** [ELEC] A substation switching arrangement that involves two buses between which three breaker bays are installed. { 'brä-kər ən ə 'haf }

**breaker-and-a-third** [ELEC] A substation switching arrangement having four breakers and three connections per bay. { 'brä-kər ən ə 'thərd }

**breaker points** [ELEC] Low-voltage contacts used to interrupt the current in the primary circuit of a gasoline engine's ignition system. { 'brä-kər ,póints }

**break frequency** [CONT SYS] The frequency at which a graph of the logarithm of the amplitude of the frequency response versus the logarithm of the frequency has an abrupt change in slope. Also known as corner frequency; knee frequency. { 'bräk ,fré-kwəns-ē }

**break-in device** [ELECTR] A device in a radio-telegraph communication system allowing an operator to receive signals in intervals between his own transmission signals. { 'bräk,in di'vīs }

**break-in operation** [COMMUN] A method of radio communication in which it is possible for the receiving operator to interrupt or break into the transmission. { 'bräk,in ,öp-ə,rā-shən }

**break key** [COMPUT SCI] A key on a computer keyboard whose depression causes processing to be interrupted. { 'bräk ,kē }

**breakout** [ELEC] A joint at which one or more conductors are brought out from a multiconductor cable. { 'brä ,kaüt }

**breakout box** [ELECTR] A device connected to a multiconductor cable that provides terminal connections to test the signals in a transmission. { 'bräk ,aüt ,bäks }

**breakoutput** [COMPUT SCI] An ALGOL procedure which causes all bytes in a device buffer to be sent to the device rather than wait until the buffer is full. { 'brä ,kaüt ,püt }

**breakover** [ELECTR] In a silicon controlled rectifier or related device, a transition into forward conduction caused by the application of an excessively high anode voltage. { 'brä ,kō-vər }

**breakover voltage** [ELECTR] The positive anode voltage at which a silicon controlled rectifier switches into the conductive state with gate circuit open. { 'brä ,kō-vər ,vól-tij }

**break period** [COMMUN] Of a rotary dial telephone, the time interval during which the circuit contacts are open. { 'bräk ,pır-ē-əd }

**breakpoint** [COMPUT SCI] A point in a program where an instruction, instruction digit, or other condition enables a programmer to interrupt the run by external intervention or by a monitor routine. { 'bräk ,póint }

**breakpoint switch** [COMPUT SCI] A manually operated switch which controls conditional operation at breakpoints, used primarily in debugging. { 'bräk ,póint ,swıch }

**breakpoint symbol** [COMPUT SCI] A symbol which may be optionally included in an instruction, as an indication, tag, or flag, to designate it as a breakpoint. { 'bräk ,póint ,sım-ból }

## breakthrough

**breakthrough** [COMPUT SCI] An interruption in the intended character stroke in optical character recognition. { 'brāk,thrū }

**B register** See index register. { 'bē,rej-ə-stər }

**bridge** [COMMUN] A device that joins two networks of the same type. [ELEC] 1. An electrical instrument having four or more branches, by means of which one or more of the electrical constants of an unknown component may be measured. 2. An electrical shunt path. { brij }

**bridge circuit** [ELEC] An electrical network consisting basically of four impedances connected in series to form a rectangle, with one pair of diagonally opposite corners connected to an input device and the other pair to an output device. { 'brij,sər-kət }

**bridged tap** [ELEC] Portion of a cable pair connected to a circuit which is not a part of the useful path. { 'brijd'tap }

**bridged-T network** [ELEC] A T network with a fourth branch connected between an input and an output terminal and across two branches of the network. { 'brijd'tē'net,wɜrk }

**bridge hybrid** See hybrid junction. { 'brij'hī-brəd }

**bridge limiter** [ELECTR] A device employed in analog computers to keep the value of a variable within specified limits. { 'brij;līm-əd-ər }

**bridge magnetic amplifier** [ELECTR] A magnetic amplifier in which each of the gate windings is connected in series with an arm of a bridge rectifier; the rectifiers provide self-saturation and direct-current output. { 'brij'mag'ned-ik'am-plə,fi-ər }

**bridge oscillator** [ELECTR] An oscillator using a balanced bridge circuit as the feedback network. { 'brij'ās-ə'lād-ər }

**bridge rectifier** [ELECTR] A full-wave rectifier with four elements connected as a bridge circuit with direct voltage obtained from one pair of opposite junctions when alternating voltage is applied to the other pair. { 'brij,'rek-tə,fi-ər }

**bridgeware** [COMPUT SCI] Software or hardware that translates programs or converts data from one format to another. { 'brij,wər }

**bridging** [ELEC] 1. Connecting one electric circuit in parallel with another. 2. The action of a selector switch whose movable contact is wide enough to touch two adjacent contacts so that the circuit is not broken during contact transfer. [MATH] The operation of carrying in addition or multiplication. { 'brij-ŋ }

**bridging amplifier** [ELECTR] Amplifier with an input impedance sufficiently high so that its input may be bridged across a circuit without substantially affecting the signal level of the circuit across which it is bridged. { 'brij-ŋ'am-plə,fi-ər }

**bridging connection** [ELECTR] Parallel connection by means of which some of the signal energy in a circuit may be withdrawn frequently, with imperceptible effect on the normal operation of the circuit. { 'brij-ŋ'ka,nek-shən }

**bridging contacts** [ELEC] A contact form in which the moving contact touches two

stationary contacts simultaneously during transfer. { 'brij-ŋ,kän,təks }

**bridging loss** [ELECTR] Loss resulting from bridging an impedance across a transmission system, quantitatively, the ratio of the signal power delivered to that part of the system following the bridging point, and measured before the bridging, to the signal power delivered to the same part after the bridging. { 'brij-ŋ'lɔs }

**brightness control** [ELECTR] A control that varies the luminance of the fluorescent screen of a cathode-ray tube, for a given input signal, by changing the grid bias of the tube and hence the beam current. Also known as brilliance control; intensity control. { 'brīt-nəs'kən'trɔl }

**brilliance** [ELECTR] 1. The degree of brightness and clarity of the display of a cathode-ray tube. 2. The degree to which the higher audio frequencies of an input sound are reproduced by a sound system. { 'bril-yəns }

**brilliance control** See brightness control. { 'bril-yəns'kən'trɔl }

**broaching bit** See reaming bit. { 'brōch-ŋ'bit }

**broadband** [COMMUN] A band with a wide range of frequencies. { 'brɔd,bænd }

**broadband amplifier** [ELECTR] An amplifier having essentially flat response over a wide range of frequencies. { 'brɔd,bænd'am-plə,fi-ər }

**broadband antenna** [ELECTROMAG] An antenna that functions satisfactorily over a wide range of frequencies, such as for all 12 very-high-frequency television channels. { 'brɔd,bænd'an'ten-ə }

**broadband channel** [COMMUN] A data transmission channel that can handle frequencies higher than the normal voice-grade line limit of 3 to 4 kilohertz; it can carry many voice or data channels simultaneously or can be used for high-speed single-channel data transmission. { 'brɔd,bænd'chan-əl }

**broadband klystron** [ELECTR] Klystron having three or more resonant cavities that are externally loaded and stagger-tuned to broaden the bandwidth. { 'brɔd,bænd'kli,strən }

**broadband path** [COMMUN] A path having a bandwidth of 20 kilohertz or greater. { 'brɔd,bænd,path }

**broadcast** [COMMUN] A television, radio, or data transmission intended for public reception. { 'brɔd,kəst }

**broadcast band** [COMMUN] The band of frequencies extending from 535 to 1605 kilohertz, corresponding to assigned radio carrier frequencies that increase in multiples of 10 kHz between 540 and 1600 kHz for the United States. Also known as standard broadcast band. { 'brɔd,kəst,bænd }

**broadcast message** [COMMUN] A message that is sent to all users of a computer network when they log on to the network. { 'brɔd,kəst'mes-ŋj }

**broadcast station** [COMMUN] A television or radio station used for transmitting programs to the general public. Also known as station. { 'brɔd,kəst,stā-shən }

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**broadcast transmitter** [ELECTR] A transmitter designed for use in a commercial amplitude-modulation, frequency-modulation, or television broadcast channel. { 'brɒd,kæst trænzmɪd-ər }

**broadside array** [ELECTROMAG] An antenna array whose direction of maximum radiation is perpendicular to the line or plane of the array. { 'brɒd,sɪd ə'rɑː }  
{ 'brɒd,sɪd ə'rɑː }

**broad tuning** [ELECTR] Poor selectivity in a radio receiver, causing reception of two or more stations at a single setting of the tuning dial. { 'brɒd,tjuːn-ɪŋ }

**Brooks variable inductometer** [ELEC] An inductometer providing a nearly linear scale and consisting of two movable coils, side by side in a plane, sandwiched between two pairs of fixed coils. { 'brʊks'ver-ɪ-ə-bəl,ɪn,dəktəm-əd-ər }

**brownout** [ELEC] 1. A restriction of electrical power usage during a power shortage, especially for advertising and display purposes. 2. An extinguishing of some of the lights in a city as a defensive measure against enemy bombardment. { 'braʊn,aʊt }

**browse mode** [COMPUT SCI] A mode of operation in which data in a document or database are conveniently displayed for rapid, on-screen review. { 'braʊz,mɒd }

**browser** [COMPUT SCI] An interactive program (client) that requests, retrieves, and displays pages from the World Wide Web. { 'braʊz-ər }

**brush** [ELEC] A conductive metal or carbon block used to make sliding electrical contact with a moving part. { 'brʌʃ }

**brush discharge** [ELEC] A luminous electric discharge that starts from a conductor when its potential exceeds a certain value but remains too low for the formation of an actual spark. { 'brʌʃ,dɪs,tʃɑːrj }

**brush encoder** [ELECTR] An encoder in which brushes that make contact with conductive segments on a rotating or linearly moving surface convert positional information to digitally encoded data. { 'brʌʃ en'kɒd-ər }

**brush holder** [ELEC] A structure in which a brush can slide in a direction perpendicular to the moving surface of a motor, generator, or other device. { 'brʌʃ,həʊl-dər }

**brush lag** [ELEC] The distance that the brushes on a motor are displaced in a direction opposite to the motor's rotation in order to overcome the effect of armature reaction. { 'brʌʃ,læg }

**brush lead** [ELEC] The distance that the brushes on a generator are displaced in the direction of the motor's rotation in order to overcome the effect of armature reaction. { 'brʌʃ,lɛd }

**brush rocker** [ELEC] A yoke to which the brush holders in an electrical machine are attached, and which can be moved to adjust the positions of the brushes. Also known as brush rocker ring. { 'brʌʃ,rə'kər }

**brush rocker ring** See brush rocker. { 'brʌʃ,rə'kər,rɪŋ }

**brush-shifting motor** [ENG] A category of alternating-current motor in which the brush

contacts shift to modify operating speed and power factor. { 'brʌʃ,ʃɪft-ɪŋ,mɒd-ər }

**brute force attack** [COMPUT SCI] An attempt to gain unauthorized access to a computing system by generating and trying all possible passwords. { 'brʊt,fɔːs ə'tæk }

**brute-force filter** [ELEC] Type of powerpack filter depending on large values of capacitance and inductance to smooth out pulsations rather than on resonant effects of tuned filters. { 'brʊt,fɔːs 'fɪl-tər }

**brute-force technique** [COMPUT SCI] Any method that relies chiefly on the advanced processing capabilities of a large computer to accomplish a task. { 'brʊt,fɔːs tek'nɪk }

**brute supply** [ELEC] A type of power supply that is completely unregulated, employing no circuitry to maintain output voltage constant with changing input line or load variations. { 'brʊt sə'plɪ }  
{ 'brʊt sə'plɪ }

**B-scan** See B-display. { 'bi,skæn }

**B-scope** See B-display. { 'bi,skɒp }

**b-spline** [COMPUT SCI] A curve that is generated by a computer-graphics program, guided by a mathematical formula which ensures that it will be continuous with other such curves; it is mathematically more complex but easier to blend than a Bézier curve. { 'bi,spɪln }

**B station** [NAV] In loran, the designation applied to one transmitting station of a pair, the signal of which always occurs more than half a repetition period after the succeeding signal and less than half a repetition period before the preceding signal from the other station of the pair, designated an A station. { 'bi,stə'shən }

**B store** See index register. { 'bi,stɔːr }

**B supply** [ELECTR] Anode high voltage and screen-grid power source in vacuum tube circuits. Also known as B power supply. { 'bi sə'plɪ }

**B trace** [ELECTR] In loran the second trace of an oscilloscope which corresponds to the signal from the B station. { 'bi,treɪs }

**B-tree** See balanced-tree. { 'bi,treɪ }  
{ 'bi,treɪ }

**B+tree** [COMPUT SCI] A version of the balanced-tree that maintains a hierarchy of indexes while linking the data sequentially. { 'bi,plʌs,treɪ }

**bubble** [COMPUT SCI] A circle that represents data in a data flow diagram. { 'bʌb-əl }

**bubble chart** See data flow diagram. { 'bʌb-əl ,tʃɑːrt }

**bubble memory** [COMPUT SCI] A computer memory in which the presence or absence of a magnetic bubble in a localized region of a thin magnetic film designates a 1 or 0; storage capacity can be well over 1 megabit per cubic inch. Also known as magnetic bubble memory. { 'bʌb-əl |mem-rɪ }  
{ 'bʌb-əl |mem-rɪ }

**bubble sort** [COMPUT SCI] A procedure for sorting a set of items that begins by sequencing the first and second items, then the second and third, and

## Buchholz protective device

so on, until the end of the set is reached, and then repeats this process until all items are correctly sequenced. { 'bʊb-əl ,sɔrt }

**Buchholz protective device** [ELEC] A protective relay which is attached to an oil-filled tank containing a transformer and which is activated either by gas produced by faults or by oil surges produced by explosive faults in the transformer. Also known as gas bubble protective device. { 'bʊk,həʊls prə'tek-tɪv dɪ'vɪs }

**bucket** [COMPUT SCI] A name usually reserved for a storage cell in which data may be accumulated. { 'bʌkət }

**bucket brigade device** [ELECTR] A semiconductor device in which majority carriers store charges that represent information, and minority carriers transfer charges from point to point in sequence. Abbreviated BBD. { 'bʌk-ət brɪ'gæd dɪ'vɪs }

**bucking transformer** [ELEC] A transformer whose voltage opposes that of a second transformer. { 'bʌk-ɪŋ træn'z'fɔrmər }

**bucking voltage** [ELEC] A voltage having a polarity opposite to that of another voltage against which it acts. { 'bʌk-ɪŋ ,vɔl-tɪʃ }

**buffer** [ELEC] An electric circuit or component that prevents undesirable electrical interaction between two circuits or components. [ELECTR] 1. An isolating circuit in an electronic computer used to prevent the action of a driven circuit from affecting the corresponding driving circuit. 2. See buffer amplifier. { 'bʌf-ər }

**buffer amplifier** [ELECTR] An amplifier used after an oscillator or other critical stage to isolate it from the effects of load impedance variations in subsequent stages. Also known as buffer; buffer stage. { |bʌf-ər 'am-plə,fɪ-ər }

**buffer capacitor** [ELECTR] A capacitor connected across the secondary of a vibrator transformer or between the anode and cathode of a cold-cathode rectifier tube to suppress voltage surges that might otherwise damage other parts in the circuit. { 'bʌf-ər kə'pəs-əd-ər }

**buffered computer** [COMPUT SCI] A computer having a temporary storage device to compensate for differences in transmission speeds. { 'bʌf-əd kəm'pyʊt-ər }

**buffered device** [COMPUT SCI] A piece of peripheral equipment, such as a printer, that is equipped with a buffer storage so that it can accept information more rapidly than it can process it. { 'bʌf-əd dɪ'vɪs }

**buffered FET logic** [ELECTR] A logic gate configuration used with gallium-arsenide field-effect transistors operating in the depletion mode, in which the level shifting required to make the input and output voltage levels compatible is achieved with Schottky barrier diodes. Abbreviated BFL. { 'bʌf-əd 'efi:tē 'lɑj-ɪk }

**buffered I/O channel** [COMPUT SCI] A storage device located between input/output (I/O) channels and main storage control to free the channels for use by other operations. { 'bʌf-əd 'i:ɔ ,chən-əl }

**buffered terminal** [COMPUT SCI] A computer terminal which contains storage equipment so that

the rate at which it sends or receives data over its line does not need to agree exactly with the rate at which the data are entered or printed. { 'bʌf-əd 'tɜ:mən-əl }

**buffer element** [ELEC] A low-impedance inverting driver circuit. { 'bʌf-ər ,el-ə-mənt }

**buffer pooling** [COMPUT SCI] A technique for receiving data in an input/output control system in which a number of buffers are available to the system; when a record is produced, a buffer is taken from the pool, used to hold the data, and returned to the pool after data transmission. { 'bʌf-ər ,pʊl-ɪŋ }

**buffer stage** See buffer amplifier. { 'bʌf-ər ,stæʃ }

**buffer storage** [COMPUT SCI] A synchronizing element used between two different forms of storage in a computer; computation continues while transfers take place between buffer storage and the secondary or internal storage. Also known as buffer. { 'bʌf-ər ,stɔr-ɪʃ }

**buffer zone** [COMPUT SCI] An area of main memory set aside for temporary storage. { 'bʌf-ər ,zɔn }

**bug** [COMPUT SCI] A defect in a program code or in designing a routine or a computer. [ELECTR] 1. A semiautomatic code-sending telegraph key in which movement of a lever to one side produces a series of correctly spaced dots and movement to the other side produces a single dash. 2. An electronic listening device, generally concealed, used for commercial or military espionage. [ENCL] A defect or imperfection present in a piece of equipment. { bʌg }

**build** [ELECTR] To increase in received signal strength. { bɪld }

**building-out circuit** [ELEC] Short section of transmission line, or a network which is shunted across a transmission line, for the purpose of impedance matching. { |bɪl-dɪŋ 'aʊt 'sɜ:kət }

**building-out network** [ELEC] Network designed to be connected to a based network so that the combination will simulate the sending-end impedance, neglecting dissipation, of a line having a termination other than that for which the basic network was designed. { |bɪl-dɪŋ 'aʊt ,net,wɜ:k }

**building-out section** [ELEC] Short section of transmission line, either open or short-circuited at the far end, shunted across another transmission line for use on an impedance-matching transformer. { |bɪl-dɪŋ 'aʊt ,sek-shən }

**built-in antenna** [ELECTROMAG] An antenna that is located inside the cabinet of a radio or television receiver. { 'bɪlt,ɪn an'ten-ə }

**built-in check** [COMPUT SCI] A hardware device which controls the accuracy of data either moved or stored within the computer system. { 'bɪlt,ɪn 'tʃek }

**built-in function** [COMPUT SCI] A function that is available through a simple reference and specification of arguments in a given higher-level programming language. Also known as built-in procedure; intrinsic procedure; standard function. { 'bɪlt,ɪn 'fʌŋk-shən }

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**built-in pointing device** [COMPUT SCI] A trackball or pointing stick that is built into the case of a portable computer and used to move an on-screen pointer. {;bilt,in 'pɔɪnt-ɪŋ di,vɪs }

**built-in procedure** See built-in function. { 'bilt,in prə'seɪ-ər }

**bulb** See envelope. { bʌlb }

**bulk-acoustic-wave delay line** [ELECTR] A delay line in which the delay is determined by the distance traveled by a bulk acoustic wave between input and output transducers mounted on a piezoelectric block. {;bʌlk ə'kjuː-stɪk 'wæv di'lā ,lɪn }

**bulk diode** [ELECTR] A semiconductor micro-wave diode that uses the bulk effect, such as Gunn diodes and diodes operating in limited space-charge-accumulation modes. {;bʌlk 'di ,ɒd }

**bulk effect** [ELECTR] An effect that occurs within the entire bulk of a semiconductor material rather than in a localized region or junction. { 'bʌlk i'fekt }

**bulk-effect device** [ELECTR] A semiconductor device that depends on a bulk effect, as in Gunn and avalanche devices. { 'bʌlk i'fekt di'vɪs }

**bulk memory** [COMPUT SCI] A high-capacity memory used in connection with a computer for bulk storage of large quantities of data. {;bʌlk 'mem-rē }

**bulk photoconductor** [ELECTR] A photoconductor having high power-handling capability and other unique properties that depend on the semiconductor and doping materials used. {;bʌlk ;fō-dō-kən'dɒk-tər }

**bulk resistor** [ELECTR] An integrated-circuit resistor in which the *n*-type epitaxial layer of a semiconducting substrate is used as a noncritical high-value resistor; the spacing between the attached terminals and the sheet resistivity of the material together determine the resistance value. { 'bʌlk rɪ'zɪs-tər }

**bulk storage** See backing storage. {;bʌlk 'stɔːr-ɪj }

**bulletin board** [COMPUT SCI] A collection of information that is stored in a computer system and can be accessed either by a specified group of people or the general public, usually by dialing a number on the public telephone system. { 'bʉl-ət-ən ,bɔːrd }

**bulletin board system** [COMPUT SCI] A computer system that enables its users, usually members of a particular interest group, to leave messages and to share information and software. Abbreviated BBS. { 'bʉl-ət-ən ,bɔːrd ,sɪs-təm }

**bump contact** [ELECTR] A large-area contact used for alloying directly to the substrate of a transistor for mounting or interconnecting purposes. { 'bʌmp ,kən,tækt }

**bunched pair** [ELEC] Group of pairs tied together or otherwise associated for identification. {;bʌncht 'peər }

**buncher** See buncher resonator. { 'bʌn-çər }

**buncher resonator** [ELECTR] The first or input cavity resonator in a velocity-modulated tube, next to the cathode; here the faster electrons catch up with the slower ones to produce bunches

of electrons. Also known as buncher; input resonator. { 'bʌn-çər ,rez-ən,æd-ər }

**bunching** [ELECTR] The flow of electrons from cathode to anode of a velocity-modulated tube as a succession of electron groups rather than as a continuous stream. { 'bʌn-çɪŋ }

**bunching voltage** [ELECTR] Radio-frequency voltage between the grids of the buncher resonator in a velocity-modulated tube such as a klystron; generally, the term implies the peak value of this oscillating voltage. { 'bʌn-çɪŋ ,vɒl-tɪj }

**bundled program** [COMPUT SCI] A computer program written, maintained, and updated by the computer manufacturer, and included in the price of the hardware. {;bʌnd-əld 'prɒ-gram }

**bundling** [COMMUN] The provision of a combination of services, such as cable television and telephone service, over a single communications system. [COMPUT SCI] The provision of hardware and software as a single product or the combination of different software packages for sale as a single unit. { 'bʌn-dlɪŋ }

**burden** [ELEC] The amount of power drawn from the circuit connecting the secondary terminals of an instrument transformer, usually expressed in volt-amperes. { 'bɜːd-ən }

**burglar alarm** [ENG] An alarm in which interruption of electric current to a relay, caused, for example, by the breaking of a metallic tape placed at an entrance to a building, deenergizes the relay and causes the relay contacts to operate the alarm indicator. Also known as intrusion alarm. { 'bɜː-glər ə'lɑːrm }

**burled set-point method** [CONT SYS] A procedure for guiding a robot manipulator along a template, in which low-gain servomechanisms apply a force along the edge of the template, while the manipulator's tool is parallel to, and buried below, the template surface. { 'ber-əd 'set ,pɔɪnt ,meth-əd }

**burn-in** [ELECTR] Operation of electronic components before they are applied in order to stabilize their characteristics and reveal defects. { 'bɜːn ,ɪn }

**burnout** [ELEC] Failure of a device due to excessive heat produced by excessive current. { 'bɜːn ,aʊt }

**burnthrough** [ELECTR] 1. An electronic-protection effort by a radar to overcome the obscuration effect of jamming signals by using the highest energy transmission and longest possible dwell in the direction of the jamming or other direction of specific interest being affected. 2. See jammer finder. { 'bɜːn,θrʉ }  
jammer finder. { 'bɜːn,θrʉ }

**burst** [COMMUN] 1. A sudden increase in the strength of a signal being received from beyond line-of-sight range. 2. A group of bits of characters that are transmitted together as a unit. 3. A group of errors that occur together in a communication and alter its content. 4. See color burst. [COMPUT SCI] 1. To separate a continuous roll of paper into stacks of individual sheets by means of a burster. 2. The transfer of a collection of records in a storage device, leaving

## burst amplifier

an interval in which data for other requirements can be obtained from or entered into the device.  
3. A sequence of signals regarded as a unit in data transmission. {bɜrst }

**burst amplifier** [COMMUN] An amplifier stage in an analog color television receiver that is keyed into conduction and amplification by a horizontal pulse at the instant of each arrival of the color burst. Also known as chroma band-pass amplifier. { 'bɜrst ,æm-pli-fi-ər }

**burster** [COMPUT SCI] An off-line device in a computer system used to separate the continuous roll of paper produced as output from a printer into individual sheets, generally along perforations in the roll. { 'bɜr-stər }

**burst mode** [COMPUT SCI] A method of transferring data between a peripheral unit and a control processing unit in a computer system in which the peripheral unit sends the central processor a signal to receive data until the peripheral unit signals that the transfer is completed. { 'bɜrst ,mɔd }

**burst pedestal** [COMMUN] Rectangular pulse-like analog television signal which may be part of the color burst; the amplitude of the color burst pedestal is measured from the alternating-current axis of the sine-wave portion to the horizontal pedestal. { 'bɜrst ,ped-ə-stəl }

**burst separator** [ELECTR] The circuit in a color television receiver that separates the color burst from the composite video signal. { 'bɜrst sep-ə-rəd-ər }

**bus** [COMPUT SCI] The circuitry and wiring connecting the various components of a computer through which data are transmitted; for example, in a personal computer the system bus interconnects the CPU, memory, and input/output devices. [ELEC] A set of two or more electric conductors that serve as common connections between load circuits and each of the polarities (in direct-current systems) or phases (in alternating-current systems) of the source of electric power. [ELECTR] One or more conductors in a computer along which information is transmitted from any of several sources to any of several destinations. { bʌs }

**bus architecture** [COMPUT SCI] A structure for handling data transmission in a computer system or network, in which components are all linked to a common bus. { 'bʌs 'ær-kə,tek-tʃər }

**busbar** [ELEC] A heavy, rigid metallic conductor, usually uninsulated, used to carry a large current or to make a common connection between several circuits. Also known as bus. { 'bʌs,bɜr }

**bus cable** [ELECTR] An electrical conductor that can be attached to a bus to extend it outside the computer housing or join it to another bus within the same computer. { 'bʌs ,kæ-bəl }

**bus cycle** [COMPUT SCI] A single transaction between the main memory and the CPU. { 'bʌs ,sɪ-kəl }

**bus duct** [ELEC] An enclosed metal unit containing copper or aluminum busbars for distribution of large amounts of power between components of the distribution system. { 'bʌs,dʌkt }

**bus extender** [ELECTR] A printed circuit board that can be joined to a bus to increase its capacity. { 'bʌs ik,sten-dər }

**bushing** See sleeve. { 'bʌsh-ɪŋ }

**bus mouse** [COMPUT SCI] A mouse that is plugged into a printed circuit board inserted into the computer's bus. { 'bʌs ,maʊs }

**bus network** [COMMUN] A communications network whose components are joined together by a single cable. { 'bʌs 'net,wɜrk }

**bus reactor** [ELEC] An air-core inductor connected between two buses or two sections of the same bus in order to limit the effects of voltage transients on either bus. { 'bʌs re'æk-tər }

**busway** [ELEC] A prefabricated assembly of standard lengths of busbars rigidly supported by solid insulation and enclosed in a sheet-metal housing. { 'bʌs,wə }

**busy test** [COMMUN] A test, in telephony, made to find out whether certain facilities which may be desired, such as a subscriber line or trunk, are available for use. { 'biz-ē ,test }

**busy tone** [COMMUN] Interrupted low tone returned to the subscriber as an indication that the party's line is busy. { 'biz-ē ,tɔn }

**Butler oscillator** [ELEC] Oscillator in which a piezoelectric crystal is connected between the cathode of two tubes, one functioning as a cathode follower, and the other as a grounded-grid amplifier. { 'bʌt-lər 'æs-ə,lād-ər }

**butt contact** [ELEC] A hemispherically shaped contact designed to mate against a similarly shaped contact. { 'bʌt ,kən,tækt }

**butterfly capacitor** [ELEC] A variable capacitor having stator and rotor plates shaped like butterfly wings, with the stator plates having an outer ring to provide an inductance so that both capacitance and inductance may be varied, thereby giving a wide tuning range. { 'bʌd-ər,flɪ kə'pæs-əd-ər }

**butterfly network** [COMPUT SCI] A scheme that connects the units of a multiprocessing system and needs *n* stages to connect 2<sup>*n*</sup> processors; at each stage a switch is thrown, depending on a particular bit in the addresses of the processors being connected. { |bʌd-ər,flɪ |net,wɜrk }

**Butterworth filter** [ELECTR] An electric filter whose pass band (graph of transmission versus frequency) has a maximally flat shape. { 'bʌd-ər ,wɜrth 'fɪl-tər }

**butt joint** [ELEC] A connection formed by placing the ends of two conductors together and joining them by welding, brazing, or soldering. { 'bʌt ,dʒɔɪnt }

**button** [COMPUT SCI] A small circle or rectangle on a graphical user interface, such that moving the pointer to it and clicking the mouse initiates some action. [ELECTR] 1. A small, round piece of metal alloyed to the base wafer of an alloy-junction transistor. Also known as dot. 2. The container that holds the carbon granules of a carbon microphone. Also known as carbon button. { 'bʌt-ən }

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**buttonhook contact** [ELEC] A curved, hooklike contact often used on feed-through terminals of headers to facilitate soldering or unsoldering of leads. { 'bʌt-ən,hʊk 'kɑ:n,tækt }

**buzz** [CONTSYS] See dither. [ELECTR] The condition of a combinatorial circuit with feedback that has undergone a transition, caused by the inputs, from an unstable state to a new state that is also unstable. { bʌz }

**BWO** See backward-wave oscillator.

**BX cable** [ELEC] Insulated wires in flexible metal tubing used for bringing electric power to electronic equipment. { 'bɛjeks 'kæ-bəl }

**bypass** [COMMUN] The use of alternative systems, such as satellite and microwave, to transmit data and voice signals, avoiding use of the communication lines of the local telephone company. [ELEC] A shunt path around some element or elements of a circuit. { 'bɪ ,pas }

**bypass capacitor** [ELEC] A capacitor connected to provide a low-impedance path for radio-frequency or audio-frequency currents around a circuit element. Also known as bypass condenser. { 'bɪ ,pas kə'pæs-əd-ər }

**bypass condenser** See bypass capacitor. { 'bɪ ,pas kən'den-sər }

**bypass filter** [ELECTR] Filter which provides a low-attenuation path around some other equipment, such as a carrier frequency filter used to bypass

a physical telephone repeater station. { 'bɪ ,pas ,fil-tər }

**byte** [COMPUT SCI] A sequence of adjacent binary digits operated upon as a unit in a computer and usually shorter than a word. { bɪt }

**byte addressable computer** [COMPUT SCI] A computer in which each byte of memory can be addressed independently of the others. { 'bɪt ə'dres-ə-bəl kəm'pyʊd-ər }

**byte-aligned** [COMMUN] A bit in a coded bit stream is byte-aligned if its position is a multiple of 8 bits from the first bit in the stream. { 'bɪt ə'lɪnd }

**bytecode** [COMPUT SCI] Compiled Java programs that can be transferred across a network and executed by the Java virtual machine. { 'bɪt,kɔd }

**byte mode** [COMPUT SCI] A method of transferring data between a peripheral unit and a central processor in which one byte is transferred at a time. { bɪt ,mɔd }

**byte multiplexor channel** [COMPUT SCI] A transmission channel in a computer system that can transmit data simultaneously from several devices and only one byte at a time. { 'bɪt 'mʌlt-i ,plek-sər ,chan-əl }

**byte-oriented protocol** [COMPUT SCI] A communications protocol in which full bytes are used as control codes. Also known as character-oriented protocol. { 'bɪt ,ɔr-ɛnt-əd 'prɔd-ə,kɔl }



- C** [COMPUT SCI] A programming language designed to implement the Unix operating system. [ELEC] See capacitance; capacitor; coulomb.
- C++** [COMPUT SCI] An object-oriented language that was created as an extension to the C language. { 'sē,plās,plās }
- cable** [ELEC] Strands of insulated electrical conductors laid together, usually around a central core, and surrounded by a heavy insulation. { 'kā-bəl }
- cable-and-trunk schematic** [ELEC] A drawing which shows, in block form, the interconnection between all major electric circuits in an office. { |kā-bəl ən 'trəŋk skə'mad-ik }
- cable armor** [ELEC] One or more layers of extra-strength material, such as steel wire or tape, to reinforce the usual lead wall in cable construction. { 'kā-bəl ,ār-mər }
- cable bridge** [ELEC] A rubber tube that encloses cables running over a floor or other surface. { 'kā-bəl ,brɪdʒ }
- cable code** See Morse cable code. { 'kā-bəl ,kōd }
- cable complement** [ELEC] Group of wire pairs in a cable having some common distinguishing characteristic. { 'kā-bəl ,kām-plə-mənt }
- cable delay** [COMPUT SCI] The time required for one bit of data to go through a cable, about 1.5 nanoseconds per foot of cable. { 'kā-bəl dɪ'leɪ }
- cable fill** [ELEC] Ratio of the number of wire pairs in use to the total number of pairs in a cable. { 'kā-bəl ,fɪl }
- cable matcher** See gender changer. { 'kā-bəl ,mætʃ-ər }
- cable messenger** [ELEC] Stranded group of wires supported above the ground at intervals by poles or other structures and employed to furnish, within these intervals, frequent points of support for conductors or cables. { 'kā-bəl ,mes-ən-jər }
- cable modem** [ELEC] A device that converts the signals used in a computer to signals that can be transmitted over cable television networks, and vice versa. { |kā-bəl |mō,dem }
- cable noise** [ELECTR] Electrical noise that is picked up by the conductors in a cable. { 'kā-bəl ,nɔɪz }
- cable run** [ELEC] Path occupied by a cable on cable racks or other support from one termination to another. { 'kā-bəl ,rən }
- cable running list** [ELEC] Drawing showing the code of cable, terminations, circuit names, and numbering of cables appearing in an office. { 'kā-bəl ;rən-ɪŋ ,lɪst }
- cable shield** [ELEC] A metallic layer applied over insulation covering a cable, composed of woven or braided wires, foil wrap, or metal tube, which acts to prevent electromagnetic or electrostatic interference from affecting conductors within. { 'kā-bəl ,ʃi:ld }
- cable television** [COMMUN] A television program distribution system in which signals from all local stations and usually a number of distant stations and program services are picked up by one or more high-gain antennas amplified on individual channels, then fed directly to individual receivers of subscribers by overhead or underground coaxial cable. Also known as community antenna television (CATV). { 'kā-bəl 'tel-ə,vɪzh-ən }
- cabletext** [COMMUN] Any videotex service that uses coaxial cable. { 'kā-bəl ,tekst }
- cable trough** [ELEC] An enclosed channel, usually beneath a floor, that provides a path for cables. { 'kā-bəl ,trɒf }
- cable vault** [ELEC] Vault in which the outside plant cables are spliced to the tipping cables. { 'kā-bəl ,vɔ:lt }
- cache** [COMPUT SCI] A small, fast storage buffer integrated in the central processing unit of some large computers. { kəʃ }
- CAD** See computer-aided design. { kəd }
- CADD** See computer-aided design and drafting. { kəd }
- caddy** [COMPUT SCI] In certain types of disk drives, a plastic tray in which a CD-ROM disk is placed before loading. { 'kæd-ē }
- cadmium cell** [ELEC] A standard cell used as a voltage reference; at 20°C its voltage is 1.0186 volts. { 'kæd-mē-əm ,sel }
- cadmium lamp** [ELEC] A lamp containing cadmium vapor; wavelength (6438.4696 international angstroms, or 643.84696 nanometers) of light emitted is a standard of length. { 'kæd-mē-əm ,læmp }
- cadmium-nickel storage cell** See nickel-cadmium battery. { 'kæd-mē-əm 'nɪk-əl 'stɔ:ɪj ,sel }
- cadmium selenide cell** [ELECTR] A photoconductive cell that uses cadmium selenide as the semiconductor material and has a fast response

## cadmium silver oxide cell

time and high sensitivity to longer wavelengths of light. ('kad-mē-əm 'sel-ə, nīd ,sel)

**cadmium silver oxide cell** [ELEC] An alkaline-electrolyte cell that may be used without recharging in primary batteries or that may be recharged for secondary-battery use. ('kad-mē-əm 'sil-vər 'ā,k,sīd ,sel)

**cadmium sulfide cell** [ELECTR] A photoconductive cell in which a small wafer of cadmium sulfide provides an extremely high dark-light resistance ratio. ('kad-mē-əm 'səl,fīd ,sel)

**cadmium telluride detector** [ELECTR] A photoconductive cell capable of operating continuously at ambient temperatures up to 750°F (400°C), used in solar cells and infrared, nuclear-radiation, and gamma-ray detectors. ('kad-mē-əm 'tel-yə,rīd dl'tek-tər)

**cadmium yellow** See cadmium sulfide. ('kad-mē-əm 'yel-ō)

**cage antenna** [ELECTROMAG] Broad-band dipole antenna in which each pole consists of a cage of wires whose overall shape resembles that of a cylinder or a cone. ('kāj an'ten-ə)

**CAI** See computer-assisted instruction.

**CAL** [COMPUT SCI] A higher-level language, developed especially for time-sharing purposes, in which a user at a remote console typewriter is directly connected to the computer and can work out problems on-line with considerable help from the computer. Derived from Conversational Algebraic Language. ('kal)

**calculated address** See generated address. ('kal-kyə,lād-əd 'ad,res)

**calculating machine** See calculator. ('kal-kyə ,lād-ig mə'shēn)

**calculator** [COMPUT SCI] A device that performs logic and arithmetic digital operations based on numerical data which are entered by pressing numerical and control keys. Also known as calculating machine. ('kal-kyə,lād-ər)

**calculus of enlargement** See calculus of finite differences. ('kal-kyə-ləs əv in'lārj-mənt)

**calculus of finite differences** [MATH] A method of interpolation that makes use of formal relations between difference operators which are, in turn, defined in terms of the values of a function on a set of equally spaced points. Also known as calculus of enlargement. ('kal-kyə-ləs əv 'fī,nīt 'dif-rən-səs)

**calibration curve** [ENG] A plot of calibration data, giving the correct value for each indicated reading of a meter or control dial. ('kal-ə,brā-shən ,kərv)

**calibration markers** [ENG] On a radar display, electronically generated marks which provide numerical values for the navigational parameters such as bearing, distance, height, or time. ('kal-ə,brā-shən ,mār-kərz)

**call** [COMPUT SCI] **1.** To transfer control to a specified closed subroutine. **2.** A statement in a computer program that references a closed subroutine or program. ('kɔl)

**call announcer** [ELECTR] Device for receiving pulses from an automatic telephone office and audibly reproducing the corresponding number

in words, so that it may be heard by a manual operator. ('kɔl ə'nəʊn-sər)

**call by location** [COMPUT SCI] A method of transferring arguments from a calling program to a subprogram in which the referencing program provides to the subprogram the memory location at which the value of the argument can be found, rather than the value itself. Also known as call by reference. ('kɔl bī ,lɔ'kā-shən)

**call by name** [COMPUT SCI] A method of transferring arguments from a calling program to a subprogram in which the actual expression is passed to the subprogram. ('kɔl bī 'nām)

**call by reference** See call by location. ('kɔl bī 'ref-rəns)

**call by value** [COMPUT SCI] A method of transferring arguments from a calling program to a subprogram in which the subprogram is provided with the values of the argument and on path leads back to the referencing program. ('kɔl bī 'val-yü)

**call circuit** [ELEC] Communications circuit between switching points used by traffic forces for transmitting switching instructions. ('kɔl ,sər-kət)

**called routine** [COMPUT SCI] A subroutine that is accessed by a call or branch instruction in a computer program. ('kɔld rü,tēn)

**call forwarding** [COMMUN] A telephone service that automatically transfers incoming calls to a designated number. ('kɔl 'fɔr-wərd-ig)

**call in** [COMPUT SCI] To transfer control of a digital computer, temporarily, from a main routine to a subroutine that is inserted in the sequence of calculating operations, to fulfill an ancillary purpose. ('kɔl ,in)

**call indicator** [ELECTR] Device for receiving pulses from an automatic switching system and displaying the corresponding called number before an operator at a manual switchboard. ('kɔl 'in-də,kād-ər)

**calling device** [ELECTR] Apparatus which generates signals, either dual-tone multifrequency (DTMF) or the pulse required for establishing connections in an automatic telephone switching system. ('kɔl-ig dl'vīs)

**calling program** [COMPUT SCI] A computer program that initiates a call to another program. ('kɔl-ig ,prō-gram)

**calling routine** [COMPUT SCI] A subroutine that initiates a call to another subroutine. ('kɔl-ig rü,tēn)

**calling sequence** [COMPUT SCI] A specific set of instructions to set up and call a given subroutine, make available the data required by it, and tell the computer where to return after the subroutine is executed. ('kɔl-ig ,sē-kwəns)

**call letters** [COMMUN] Identifying letters, sometimes including numerals, assigned to radio and television stations by the Federal Communications Commission and other regulatory authorities throughout the world. Also known as call sign. ('kɔl ,led-ərz)

**call number** [COMPUT SCI] In computer operations, a set of characters identifying a subroutine.

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mation to be used in generating the subroutine,  
or information related to the operands. { 'kōl  
,nām-bar }

**call setup time** [COMMUN] The period of time  
between the lifting of a handset to make a  
telephone call and the start of voice or data  
transmission. { 'kōl'sed,əp,tīm }

**call sign** See call letters. { 'kōl,sīn }

**call up** [COMPUT SCI] To retrieve data from com-  
puter memory, especially for display and user  
interaction. { 'kōl,əp }

**Calzecchi-Onesti effect** [ELEC] A change in the  
conductivity of a loosely aggregated metallic  
powder caused by an applied electric field.  
{ ,kält'se-kē ,ō'nes-tē'fekt }

**CAM** See computer-aided manufacturing. { ,sē  
,lā'em or kam }

**camcorder** [ELECTR] A one-piece hand-held  
television camera with built-in videocassette  
recorder, microphone, and battery pack,  
utilizing a charge-coupled device array as its  
light-sensitive element. { 'kam,kórd-ər }

**camera** See television camera. { 'kam-rə }

**camera cable** [ELEC] Cable or group of wires that  
carries the picture from the television camera to  
the control room. { 'kam-rə ,kā-bəl }

**camera chain** [COMMUN] A television camera,  
associated amplifiers, a monitor, and the cable  
needed to bring the camera output signal to the  
control room. { 'kam-rə 'chān }

**camera tube** [ELECTR] An electron-beam tube  
used in a television camera to convert an opti-  
cal image into a corresponding charge-density  
electric image and to scan the resulting electric  
image in a predetermined sequence to provide an  
equivalent electric signal. Also known as pickup  
tube; television camera tube. { 'kam-rə ,tüb }

**Campbell bridge** [ELEC] 1. A bridge designed for  
comparison of mutual inductances. 2. A circuit  
for measuring frequencies by adjusting a mutual  
inductance, until the current across a detector is  
zero. { 'kam-əl ,brīj }

**camp-on system** [COMMUN] A circuit control fea-  
ture whereby a user attempting to establish a  
telephone call and encountering a busy station  
will hold the connection for a preset time, to the  
exclusion of other callers, in case the original  
conversation should terminate. { 'kəmp ,ōn  
,sīs-təm }

**canceler** [ELECTR] A circuit used in providing  
moving-target indication in radar, in which small  
sets of successive pulses are compared such  
that invariant returns, presumed indicative of  
stationary objects, are cancelled and ignored;  
a primitive form of Doppler processing. Usually  
cited as a "two-pulse" or "three-pulse canceler,"  
for example. { 'kən-səl-ər }

**cancellation circuit** [ELECTR] A circuit used in  
providing moving-target indication on a plan  
position indicator scope; cancels constant-  
amplitude fixed-target pulses by subtraction  
of successive pulse trains. { kən-səl-ā-shən  
,sər-kət }

**canned cycle** [COMPUT SCI] Any set of operations,  
either software or hardware, that is activated by  
a single command. { 'kænd 'sī-kəl }

**canned program** [COMPUT SCI] A program which  
has been written to solve a particular problem, is  
available to users of a computer system, and is  
usually fixed in form and capable of little or no  
modification. { 'kænd 'prō-grəm }

**canonical form** [CONT SYS] A specific type of  
dynamical system representation in which the  
associated matrices possess specific row-column  
structures. { kə'nān-ə-kəl ,fōrm }

**canonical schema** [COMPUT SCI] A model that  
represents the structure and interrelationships  
of data within a database. { kə'nān-ə-kəl  
'skē-mə }

**capability** [COMPUT SCI] A permission that is given  
to a user of a computing system in advance to  
access a particular object in the system in a  
particular way, and that the user can later present  
to a reference monitor as a prevalidated ticket to  
gain access. { ,kāp-ə'bil-ə-dē }

**capability list** [COMPUT SCI] A row of an access  
matrix that contains the access rights of a given  
user to various files and other resources of a  
computer system. { ,kā-pə'bil-əd-ē ,list }

**capacitance** [ELEC] The ratio of the charge on one  
of the conductors of a capacitor (there being  
an equal and opposite charge on the other  
conductor) to the potential difference between  
the conductors. Symbolized C. Formerly known  
as capacity. { kə'pas-ə-təns }

**capacitance altimeter** [ENG] An absolute alti-  
meter which determines height of an aircraft above-  
ground by measuring the variations in capaci-  
tance between two conductors on the aircraft  
when the ground is near enough to act as a third  
conductor. { kə'pas-ə-təns əl'tīm-əd-ər }

**capacitance box** [ELEC] An assembly of capaci-  
tors and switches which permits adjustment  
of the capacitance existing at the terminals in  
nominally uniform steps, from a minimum value  
near zero to the maximum which exists when  
all the capacitors are connected in parallel.  
{ kə'pas-ə-təns ,bāks }

**capacitance bridge** [ELEC] A bridge for compar-  
ing two capacitances, such as a Schering bridge.  
{ kə'pas-ə-təns ,brīj }

**capacitance hat** [ELECTROMAG] A network of  
wires that is placed at the top of an antenna either  
to increase its bandwidth or to lower its resonant  
frequency. { kə'pas-əd-əns ,hat }

**capacitance level indicator** [ENG] A level indi-  
cator in which the material being monitored  
serves as the dielectric of a capacitor formed by a  
metal tank and an insulated electrode mounted  
vertically in the tank. { kə'pas-ə-təns 'lev-əl  
'in-də,kād-ər }

**capacitance meter** [ENG] An instrument used to  
measure capacitance values of capacitors or of  
circuits containing capacitance. { kə'pas-ə-təns  
,mēd-ər }

**capacitance-operated intrusion detector** [ENG]  
A boundary alarm system in which the approach  
of an intruder to an antenna wire encircling the

## capacitance relay

protected area a few feet above ground changes the antenna-ground capacitance and sets off the alarm. { kə'pæs-ə-təns ; aop-ə, rād-əd in 'trū-zhən di'tek-tər }

**capacitance relay** [ELECTR] An electronic relay that responds to a small change in capacitance, such as that created by bringing a hand near a pickup wire or plate. { kə'pæs-ə-təns 'rē,lā }

**capacitance standard** See standard capacitor. { kə'pæs-ə-təns ,stæn-dərd }

**capacitive coupling** [ELEC] Use of a capacitor to transfer energy from one circuit to another. { kə'pæs-ə-təns ,kəp-lɪŋ }

**capacitive diaphragm** [ELECTROMAG] A resonant window used in a waveguide to provide the equivalent of capacitive reactance at the frequency being transmitted. { kə'pæs-əd-iv 'dī-ə,frəm }

**capacitive-discharge ignition** [ELECTR] An automotive ignition system in which energy is stored in a capacitor and discharged across the gap of a spark plug through a step-up pulse transformer and distributor each time a silicon controlled rectifier is triggered. { kə'pæs-əd-iv ,dis,çhärj ig 'nɪʃ-ən }

**capacitive-discharge pilot light** [ELECTR] An electronic ignition system, operating off an alternating-current power line or battery power supply, that produces a spark for lighting a gas flame. { kə'pæs-əd-iv ,dis,çhärj 'pɪ-lət ,lɪt }

**capacitive divider** [ELEC] Two or more capacitors placed in series across a source, making available a portion of the source voltage across each capacitor; the voltage across each capacitor will be inversely proportional to its capacitance. { kə'pæs-əd-iv di'vɪd-ər }

**capacitive electrometer** [ENG] An instrument for measuring small voltages; the voltage is applied to the plates of a capacitor when they are close together, then the voltage source is removed and the plates are separated, increasing the potential difference between them to a measurable value. Also known as condensing electrometer. { kə'pæs-əd-iv ,i,lek'träm-əd-ər }

**capacitive feedback** [ELECTR] Process of returning part of the energy in the plate (or output) circuit of a vacuum tube (or other device) to the grid (or input) circuit by means of a capacitance common to both circuits. { kə'pæs-əd-iv 'fed ,bæk }

**capacitive loading** [ELECTROMAG] 1. Raising the resonant frequency of an antenna by connecting a fixed capacitor or capacitors in series with it. 2. Lowering the resonant frequency of an antenna by installing a capacitance hat. { kə'pæs-əd-iv 'lōd-ɪŋ }

**capacitive post** [ELECTROMAG] Metal post or screw extending across a waveguide at right angles to the E field, to provide capacitive susceptance in parallel with the waveguide for tuning or matching purposes. { kə'pæs-əd-iv 'pöst }

**capacitive pressure transducer** [ENG] A measurement device in which variations in pressure upon a capacitive element proportionately change the element's capacitive rating and thus the strength of the measured electric signal

from the device. { kə'pæs-əd-iv 'presh-ər tranz ,dū-sər }

**capacitive reactance** [ELECTROMAG] Reactance due to the capacitance of a capacitor or circuit, equal to the inverse of the product of the capacitance and the angular frequency. { kə'pæs-əd-iv rē'ak-təns }

**capacitive tuning** [ELECTR] Tuning involving use of a variable capacitor. { kə'pæs-əd-iv 'tūn-ɪŋ }

**capacitive window** [ELECTROMAG] Conducting diaphragm extending into a waveguide from one or both sidewalls, producing the effect of a capacitive susceptance in parallel with the waveguide. { kə'pæs-əd-iv 'wɪn-dō }

**capacitor** [ELEC] A device which consists essentially of two conductors (such as parallel metal plates) insulated from each other by a dielectric and which introduces capacitance into a circuit, stores electrical energy, blocks the flow of direct current, and permits the flow of alternating current to a degree dependent on the capacitor's capacitance and the current frequency. Symbolized C. Also known as condenser; electric condenser. { kə'pæs-əd-ər }

**capacitor antenna** [ELECTROMAG] Antenna consisting of two conductors or systems of conductors, the essential characteristic of which is its capacitance. Also known as condenser antenna. { kə'pæs-əd-ər an'ten-ə }

**capacitor bank** [ELEC] A number of capacitors connected in series or in parallel. { kə'pæs-əd-ər ,bæŋk }

**capacitor box** [ELECTR] A box-shaped structure in which a capacitor is submerged in a heat-absorbing medium, usually water. Also known as condenser box. { kə'pæs-əd-ər ,bæks }

**capacitor color code** [ELEC] A method of marking the value on a capacitor by means of dots or bands of colors as specified in the Electronic Industry Association color code. { kə'pæs-əd-ər 'kɔl-ər ,kɔd }

**capacitor-input filter** [ELECTR] A power-supply filter in which a shunt capacitor is the first element after the rectifier. { kə'pæs-əd-ər 'ɪn,pʊt ,fɪl-tər }

**capacitor loudspeaker** See electrostatic loudspeaker. { kə'pæs-əd-ər 'laʊd,spæk-ər }

**capacitor microphone** [ENG ACOUS] A microphone consisting essentially of a flexible metal diaphragm and a rigid metal plate that together form a two-plate air capacitor; sound waves set the diaphragm in vibration, producing capacitance variations that are converted into audio-frequency signals by a suitable amplifier circuit. Also known as condenser microphone; electrostatic microphone. { kə'pæs-əd-ər 'mɪ-krə,fɔn }

**capacitor motor** [ELEC] A single-phase induction motor having a main winding connected directly to a source of alternating-current power and an auxiliary winding connected in series with a capacitor to the source of ac power. See capacitor-start motor. { kə'pæs-əd-ər ,mōd-ər }

**capacitor-resistor unit** See rescap. { kə'pæs-əd-ər rɪ'zɪs-tər ,yü-nət }

ad-iv 'presh-ər tranz

[TROMAG] Reactance capacitor or circuit, the product of the ar frequency. { kə

'tuning involving use

{kə'pas-əd-iv 'tūn-ig }

[ROMAG] Conducting

a waveguide from

lucing the effect of

a parallel with the

vin-dō }

ich consists essen-

th as parallel metal

other by a dielectric

tance into a circuit,

as the flow of direct

low of alternating

ent on the capac-

current frequency,

condenser, electric

[MAG] Antenna con-

systems of conduc-

tive of which is its

condenser antenna.

number of capacitors

lel. { kə'pas-əd-ər

κ-shaped structure

merged in a heat-

ater. Also known as

or ,bäks }

A method of mark-

by means of dots

d in the Electronic

de. { kə'pas-əd-ər

!} A power-supply

acitor is the first

ak'pas-əd-ər |in,püt

electrostatic loud-

speaker }

[ACOUS] A micro-

phone of a flexible metal

plate that to-

capacitor; sound

reproduction, producing

re converted into

amplifier

user microphone;

ak'pas-əd-ər 'mī-

single-phase induc-

ing-current power

ected in series

of ac power. See

is-əd-ər ,mōd-ər }

p. { kə'pas-əd-ər

**capacitor-start motor** [ELEC] A capacitor motor in which the capacitor is in the circuit only during the starting period, the capacitor and its auxiliary winding are disconnected automatically by a centrifugal switch or other device when the motor reaches a predetermined speed. Also known as capacitor motor. { kə'pas-əd-ər |stärt ,mōd-ər }

**capacitor start-run motor** See permanent-split capacitor motor. { kə'pas-əd-ər |stärt |rən ,mōd-ər }

**capacity** See capacitance; storage capacity. { kə'pas-əd-ē }

**capacity cell** [ELEC] 1. Capacitance-type device used to measure the dielectric constants of gases, liquids, or solids. 2. Capacitance-type device used to monitor certain composition changes in flowing streams. { kə'pas-əd-ē ,sel }

**capacity-rate product** [COMMUN] The product of the capacity of a data-storage device in gigabytes and the data rate in megabits per second. { kə'pas-əd-ē ,rāt ,präd-əkt }

**caprister** See rescap. { kə'pris-tər }

**capstan** [ENG] A shaft which pulls magnetic tape through a machine at constant speed. { 'kəp-stən }

**capture effect** [ELECTR] The effect wherein a strong frequency-modulation signal in an FM receiver completely suppresses a weaker signal on the same or nearly the same frequency. { 'kəp-čər |'fekt }

**capture ratio** [COMMUN] A measure of the ability of a frequency-modulation tuner to reject the weaker of two stations that are on the same frequency; the lower the ratio of desired to undesired signals, the better the performance of the tuner. { 'kəp-čər ,rā-shō }

**CAR** See computer-assisted retrieval. { kər }

**carbon arc** [ELEC] An electric arc between two electrodes, at least one of which is made of carbon; used in welding and high-intensity lamps, such as in searchlights and photography lamps. { 'kär-bən |ärk }

**carbon-arc lamp** [ELEC] An arc lamp in which an electric current flows between two electrodes of pure carbon, with incandescence at one or both electrodes and some light from the luminescence of the arc. { 'kär-bən |ärk 'lamp }

**carbon brush** [ELEC] A rod made of carbon that bears against a commutator, collector ring, or slip ring to provide passage for the electric current from a dynamo through an outside circuit or for an external current through a motor. { 'kär-bən |brəš }

**carbon button** See button. { 'kär-bən |bət-ən }

**carbon-film hygrometer element** [ELEC] An electrical hygrometer element constructed of a plastic strip coated with a film of carbon black dispersed in a hygroscopic binder; variations in atmospheric moisture content vary the volume of the binder and thus change the resistance of the carbon coating. { 'kär-bən ,film |hī'grām-əd-ər ,el-ə-mənt }

**carbon-film resistor** [ELEC] A resistor made by depositing a thin carbon film on a ceramic form. { 'kär-bən ,film |rī'zīst-ər }

**carbon lamp** [ELEC] An arc lamp with carbon electrodes. { 'kär-bən ,lamp }

**carbon microphone** [ENG ACOUS] A microphone in which a flexible diaphragm moves in response to sound waves and applies a varying pressure to a container filled with carbon granules, causing the resistance of the microphone to vary correspondingly. { 'kär-bən 'mī-kro,fōn }

**carbon pile** [ELEC] A variable resistor consisting of a stack of carbon disks mounted between a fixed metal plate and a movable one that serve as the terminals of the resistor; the resistance value is reduced by applying pressure to the movable plate. { 'kär-bən ,pīl }

**carbon-pile pressure transducer** [ENG] A measurement device in which variations in pressure upon a conductive carbon core proportionately change the core's electrical resistance, and thus the strength of the measured electric signal from the device. { 'kär-bən ,pīl 'presh-ər tranz ,dü-sər }

**carbon resistor** [ELECTR] A resistor consisting of carbon particles mixed with a binder, molded into a cylindrical shape, and baked; terminal leads are attached to opposite ends. Also known as composition resistor. { 'kär-bən |rī'zīst-ər }

**carbon transducer** [ENG] A transducer consisting of carbon granules in contact with a fixed electrode and a movable electrode, so that motion of the movable electrode varies the resistance of the granules. { 'kär-bən tranz'dü-sər }

**carcinotron** See backward-wave oscillator. { 'kärs-ən-ə ,trän }

**card** [COMPUT SCI] See punch card. [ELECTR] A printed circuit board or other arrangement of miniaturized components that can be plugged into a computer or peripheral device. { kärd }

**card cage** [ELECTR] A rack built into a computer to hold printed circuit boards and allow them to be installed or removed easily. { 'kärd ,kāj }

**card dialer** [COMMUN] A telephone in which a number can be dialed automatically and almost instantly by inserting a coded card for that number in a slot on the dialer; now obsolete, having been replaced by automatic dialers using electronic memory. { 'kärd ,dī-lər }

**card-edge connector** [ELEC] A connector that mates with printed-wiring leads running to the edge of a printed circuit board on one or both sides. Also known as edgeboard connector. { 'kärd ,ej kə'nek-tər }

**card holder** [ELECTR] A U-shaped slot designed to hold the edge of a printed circuit board securely in a card cage. { 'kärd ,hōl-dər }

**cardinal point effect** [ELECTR] The increased intensity of a line or group of returns on the radarscope occurring when the radar beam is perpendicular to the rectangular surface of a line or group of similarly aligned features in the ground pattern. { 'kärd-nəl |pōint |'fekt }

**cardioid microphone** [ENG ACOUS] A microphone having a heart-shaped, or cardioid, response pattern, so it has nearly uniform response for a range of about 180° in one direction and

## cardioid pattern

minimum response in the opposite direction. { 'kɑrd-ē,ōid 'mī-krə,fɒn }

**cardioid pattern** [ENG] Heart-shaped pattern obtained as the response or radiation characteristic of certain directional antennas, or as the response characteristic of certain types of microphones. { 'kɑrd-ē,ōid ,pad-ərŋ }

**card key access** [ENG] A physical security system in which doors are unlocked by placing a badge that contains magnetically coded information in proximity to a reading device; some systems also require the typing of this information on a keyboard. { 'kɑrd ,kē 'ak,sɛs }

**card slot** [ELECTR] A groove where a printed circuit board fits into a card cage or backplane. { 'kɑrd ,slɑt }

**carriage return** [COMPUT SCI] The operation that causes the next character to be printed at the extreme left margin, and usually advances to the next line at the same time. { 'kɑr-ij ri'tɔrn }

**carrier** [COMMUN] 1. The radio wave produced by a transmitter when there is no modulating signal, or any other wave, recurring series of pulses, or direct current capable of being modulated. Also known as carrier wave; signal carrier. 2. A wave generated locally at a receiver that, when combined with the sidebands of a suppressed-carrier transmission in a suitable detector, produces the modulating wave. 3. See carrier system. [SOLID STATE] See charge carrier. { 'kɑr-ē-ər }

**carrier amplifier** [ELECTR] A direct-current amplifier in which the dc input signal is filtered by a low-pass filter, then used to modulate a carrier so it can be amplified conventionally as an alternating-current signal; the amplified dc output is obtained by rectifying and filtering the rectified carrier signal. { 'kɑr-ē-ər ,am-plə,fī-ər }

**carrier amplitude regulation** [COMMUN] Change in amplitude of the carrier wave in an amplitude-modulated transmitter when modulation is applied under conditions of symmetrical modulation. { 'kɑr-ē-ər 'am-plə,tjūd reg-yə'lā-shən }

**carrier beat** [COMMUN] An undesirable heterodyne of facsimile signals, each synchronous with a different stable reference oscillator, causing a pattern in received copy. { 'kɑr-ē-ər ,bēt }

**carrier channel** [COMMUN] The equipment and lines that make up a complete carrier-current circuit between two or more points. { 'kɑr-ē-ər ,chan-əl }

**carrier chrominance signal** See chrominance signal. { 'kɑr-ē-ər 'krō-mə-nəns ,sig-nəl }

**carrier current** [COMMUN] A higher-frequency alternating current superimposed on ordinary telephone, telegraph, and power-line frequencies for communication and control purposes. { 'kɑr-ē-ər ,kər-ənt }

**carrier detect** [COMPUT SCI] A signal sent by a modem to a computer or a terminal to indicate that it is receiving a character. { 'kɑr-ē-ər di ,tekt }

**carrier frequency** [COMMUN] The frequency generated by an unmodulated radio, radar, carrier

communication, or other transmitter, or the average frequency of the emitted wave when modulated by a symmetrical signal. Also known as center frequency; resting frequency. { 'kɑr-ē-ər ,frē-kwən-sē }

**carrier leak** [COMMUN] Carrier remaining after carrier suppression in a suppressed-carrier transmission system. { 'kɑr-ē-ər ,lɛk }

**carrier level** [COMMUN] The strength or level of an unmodulated carrier signal at a particular point in a radio system, expressed in decibels in relation to some reference level. { 'kɑr-ē-ər ,lev-əl }

**carrier line** [ELEC] Any transmission line used for multiple-channel carrier communication. { 'kɑr-ē-ər ,līn }

**carrier loading** [ELECTROMAG] The addition of lumped inductances to the cable section of a transmission line specifically designed for carrier transmission; it serves to minimize impedance mismatch between cable and open wire and to reduce the cable attenuation. { 'kɑr-ē-ər ,lɔd-iŋ }

**carrier noise** [COMMUN] Noise produced by undesired variation of a radio-frequency signal in the absence of any intended modulation. Also known as residual modulation. { 'kɑr-ē-ər ,nɔiz }

**carrier power output rating** [COMMUN] Power available at the output terminals of a transmitter when the output terminals are connected to the normal-load circuit or to a circuit equivalent thereto. { 'kɑr-ē-ər 'paʊ-ər 'aʊt,pʊt ,rād-iŋ }

**carrier repeater** [ELECTR] Equipment designed to raise carrier signal levels to such a value that they may traverse a succeeding line section at such amplitude as to preserve an adequate signal-to-noise ratio; while the heart of a repeater is the amplifier, necessary adjuncts are filters, equalizers, level controls, and so on, depending upon the operating methods. { 'kɑr-ē-ər ri'pɛd-ər }

**carrier sense multiple access with collision detection** See CSMA/CD. { 'kɑr-ē-ər 'sens 'məl-tə-pəl 'ak,sɛs wɪθ kə'lɪzh-ən dɪ,tek-shən }

**carrier shift** [COMMUN] 1. Transmission of information by radio through shifting the carrier frequency in one direction for a mark signal and in the opposite direction for a spacing signal. 2. Condition resulting from imperfect modulation whereby the positive and negative excursions of the envelope pattern are unequal, thus effecting a change in the power associated with the carrier. { 'kɑr-ē-ər ,shift }

**carrier signaling** [COMMUN] Method by which busy signals, ringing, or dial signaling relays are operated by the transmission of a carrier-frequency tone. { 'kɑr-ē-ər ,sig-nəl-iŋ }

**carrier suppression** [COMMUN] 1. Suppression of the carrier frequency after conventional modulation at the transmitter, with reinsertion of the carrier at the receiving end before demodulation. 2. Suppression of the carrier when there is no modulation signal to be transmitted; used on ships to reduce interference between transmitters. { 'kɑr-ē-ər sə'prɛsh-ən }

mitter, or the average wave when modulated. Also known as carrier frequency. { 'kar-ē-ər }

remaining after a carrier has been subtracted from a modulated carrier. Also known as residual carrier. { 'kar-ē-ər }

carrier line used for communication.

The addition of a carrier to a modulated section of a transmission line is designed for carrier impedance matching between an open wire and a closed wire. { 'kar-ē-ər }

carrier wave produced by a single-frequency signal in a modulated wave. Also known as carrier frequency. { 'kar-ē-ər, nōiz }

carrier wave [COMMUN] Power of a carrier wave is connected to the circuit equivalent to the carrier wave. { 'kar-ē-ər, pūt, rād-ig }

carrier wave component designed to such a value that the line section will have an adequate impedance. Part of a repeater circuit are filters, so on, depends. { 'kar-ē-ər }

carrier wave with collision. A carrier wave is a signal that carries information. The collision of a carrier wave with another carrier wave is a collision. { 'kar-ē-ər, sens, māl-ək-shən }

carrier wave method by which a carrier wave is used for signaling relays. { 'kar-ē-ər, sig-nāl }

carrier wave suppression. 1. Suppression of a carrier wave by the insertion of a carrier wave. 2. Suppression of a carrier wave by the insertion of a carrier wave. { 'kar-ē-ər, sig-nāl }

carrier swing [COMMUN] The total deviation of a frequency-modulated or phase-modulated wave from the lowest instantaneous frequency to the highest instantaneous frequency. { 'kar-ē-ər, swīg }

carrier system [COMMUN] A system permitting a number of simultaneous, independent communications over the same circuit. Also known as carrier. { 'kar-ē-ər, sis-təm }

carrier telegraphy [COMMUN] Telegraphy in which a single-frequency carrier wave is modulated by the transmitting apparatus for transmission over wire lines. { 'kar-ē-ər, tēl-ē-g-rā-fē }

carrier telephony [COMMUN] Telephony in which a single-frequency carrier wave is modulated by a voice-frequency signal for transmission over wire lines. { 'kar-ē-ər, tēl-ē-f-ō-nē }

carrier terminal [ELECTR] Apparatus at one end of a carrier transmission system, whereby the processes of modulation, demodulation, filtering, amplification, and associated functions are effected. { 'kar-ē-ər, tər-m-ō-n-əl }

carrier-to-noise ratio [COMMUN] The ratio of the magnitude of the carrier to that of the noise after specified band limiting and before any nonlinear process such as amplitude limiting and detection. { 'kar-ē-ər, tō, nōiz, rā-shō }

carrier transfer filters [ELECTR] Filters arranged as a carrier-frequency crossover or bridge between two transmission circuits. { 'kar-ē-ər, t-rānz-fər, f-īl-tə-rz }

carrier transmission [COMMUN] Transmission in which the transmitted electric wave is a wave resulting from the modulation of a single-frequency wave by a modulating wave. { 'kar-ē-ər, t-rānz-mish-ən }

carrier wave See carrier. { 'kar-ē-ər, wāv }

carry [MATH] An arithmetic operation that occurs in the course of addition when the sum of the digits in a given position equals or exceeds the base of the number system; a multiple  $m$  of the base is subtracted from this sum so that the remainder is less than the base, and the number  $m$  is then added to the next-higher-order digit. { 'kar-ē }

carry-complete signal [COMPUT SCI] A signal generated by a digital parallel adder, indicating that all carries from an adding operation have been generated and propagated, and that the addition operation is completed. { 'kar-ē, kəm, plēt, sig-nāl }

carry flag [COMPUT SCI] A flip-flop circuit which indicates overflow in arithmetic operations. { 'kar-ē, flag }

carrying capacity [ELECTR] The maximum amount of current or power that can be safely handled by a wire or other component. { 'kar-ē-ig, kə'pəs-əd-ē }

carry lookahead [COMPUT SCI] A circuit which allows low-order carries to ripple through all the way to the highest-order bit to output a completed sum. { 'kar-ē, 'lūk-ə, hed }

carry-save adder [COMPUT SCI] A device for the rapid addition of three operands; consists of a sequence of full adders, in which one of the

operands is entered in the carry inputs, and the carry outputs, instead of feeding the carry inputs of the following full adders, form a second output word which is then added to the ordinary output in a two-operand adder to form the final sum. { 'kar-ē, sāv, 'ad-ər }

carry signal [COMPUT SCI] A signal produced in a computer when the sum of two digits in the same column equals or exceeds the base of the number system in use or when the difference between two digits is less than zero. { 'kar-ē, sig-nāl }

carry time [COMPUT SCI] The time needed to transfer all carry digits to the next higher column. { 'kar-ē, tīm }

Cartesian-coordinate robot [CONT SYS] A robot having orthogonal, sliding joints and supported by a nonrotary base as the axis. { kār'tē-zhan kō, jōrd-ən-ət, 'rō, bāt }

cartridge [COMPUT SCI] A self-contained module that contains disks, magnetic tape, or integrated circuits for storing data. { 'kār-trīj }

cartridge disk [COMPUT SCI] A type of disk storage device consisting of a single disk encased in a compact container which can be inserted in and removed from the disk drive unit; used extensively with computer systems. { 'kār-trīj, disk }

cartridge font [COMPUT SCI] A font for a computer printer that is stored on a read-only memory chip within a cartridge (a module that is inserted in a slot in the printer). { 'kār-trīj, fənt }

cartridge fuse [ELECTR] A type of electric fuse in which the fusible element is connected between metal ferrules at either end of an insulating tube. { 'kār-trīj, füz }

cartridge lamp [ELECTR] A pilot or dial lamp that has a tubular glass envelope with metal-ferrule terminals at each end. { 'kār-trīj, lamp }

cartridge tape drive [COMPUT SCI] A tape drive which will automatically thread the tape on the take-up reels without human assistance. Formerly known as hypertape drive. { 'kār-trīj, tēp, drīv }

cascade [COMPUT SCI] A series of actions that take place in the course of data processing, each triggered by the previous action in the series. [ELECTR] An electric-power circuit arrangement in which circuit breakers of reduced interrupting ratings are used in the branches, the circuit breakers being assisted in their protection function by other circuit breakers which operate almost instantaneously. Also known as backup arrangement. [ELECTR] See avalanche. { ka'skād }

cascade amplifier [ELECTR] A vacuum-tube amplifier containing two or more stages arranged in the conventional series manner. Also known as multistage amplifier. { ka'skād, am-plā, fī-ər }

cascade-amplifier klystron [ELECTR] A klystron having three resonant cavities to provide increased power amplification and output; the extra resonator, located between the input and output resonators, is excited by the bunched beam emerging from the first resonator gap and produces further bunching of the beam. { ka'skād, am-plā, fī-ər, klī, strān }

cascade compensation [CONT SYS] Compensation in which the compensator is placed in series

## cascade connection

- with the forward transfer function. Also known as series compensation, tandem compensation. { ka'skād kām-pən'sā-shən }
- cascade connection** [ELECTR] A series connection of amplifier stages, networks, or tuning circuits in which the output of one feeds the input of the next. Also known as tandem connection. { ka'skād kō'nek-shən }
- cascade control** [CONT SYS] An automatic control system in which various control units are linked in sequence, each control unit regulating the operation of the next control unit in line. { ka'skād kōn'trōl }
- cascade converter** [ELEC] A rotary converter that is powered from the secondary of an induction motor that is connected to the same shaft. { ka'skād kōn,vərd-ər }
- cascaded** [ENG] Of a series of elements or devices, arranged so that the output of one feeds directly into the input of another, as a series of dynodes or a series of airfoils. { ka'skād-əd }
- cascaded carry** [COMPUT SCI] A carry process in which the addition of two numerals results in a sum numeral and a carry numeral that are in turn added together, this process being repeated until no new carries are generated. { ka'skād-əd 'kār-ē }
- cascaded feedback canceler** [ELECTR] Sophisticated moving-target-indicator canceler which provides clutter and chaff rejection. Also known as velocity shaped canceler. { ka'skād-əd 'fēd ,bək ,kən-slər }
- cascade image tube** [ELECTR] An image tube having a number of sections stacked together, the output image of one section serving as the input for the next section, used for light detection at very low levels. { ka'skād 'im-ij ,tüb }
- cascade junction** [ELECTR] Two *pn* semiconductor junctions in tandem such that the condition of the first governs that of the second. { ka'skād 'jɔŋk-shən }
- cascade limiter** [ELECTR] A limiter circuit that uses two vacuum tubes in series to give improved limiter operation for both weak and strong signals in a frequency-modulation receiver. Also known as double limiter. { ka'skād 'lim-əd-ər }
- cascade mixing** [ELEC] A mechanism for ion-beam mixing of a film and a substrate in which the recoil of an atom from a collision with an incident ion initiates a series of secondary collisions among the film and substrate atoms, leading to transfer of atoms from the substrate into the film as well as from the film into the substrate. { ka'skād ,mik-siŋ }
- cascade networks** [ELEC] Two networks in tandem such that the output of the first feeds the input of the second. { ka'skād 'net,wərks }
- cascade noise** [ELECTR] The noise in a communications receiver after an input signal has been subjected to two tandem stages of amplification. { ka'skād 'nɔiz }
- cascade transformer** [ELEC] A source of high voltage that is made up of a collection of step-up transformers; secondary windings are in series, and primary windings, except the first, are supplied from a pair of taps on the secondary winding of the preceding transformer. { ka'skād tranz'fɔr-mər }
- cascading** [ELEC] An effect in which a failure of an electrical power system causes this system to draw excessive amounts of power from power systems which are interconnected with it, causing them to fail, and these systems cause adjacent systems to fail in a similar manner, and so forth. { ka'skād-iŋ }
- cascading menu** [COMPUT SCI] A menu that appears next to a pull-down menu as the result of selecting a choice on the latter. { ka'skād-iŋ 'men-yü }
- cascading windows** [COMPUT SCI] Two or more windows displayed so that they overlap but their title bars are still visible. { ka'skād-iŋ 'win,dōz }
- cascode amplifier** [ELECTR] An amplifier consisting of a grounded-emitter input stage that drives a grounded-base output stage; advantages include high gain and low noise; widely used in television tuners. { 'ka,skōd 'am-plə-fi-ər }
- case** [COMPUT SCI] **1.** In computers, a set of data to be used by a particular program. **2.** The metal box that houses a computer's circuit boards, disk drives, and power supply. Also known as system unit. { kās }
- CASE** Sæ computer-aided software engineering. { kās }
- case-sensitive language** [COMPUT SCI] A programming language in which upper-case letters are distinguished from lower-case letters. { 'kās ,sens-ə-tiv 'laŋ-gwɪj }
- case structure** [COMPUT SCI] A group of program statements in which a condition is tested and, according to the results of the test, one of at least three specific groups of program statements is executed, after which the program returns to the original location. { 'kās ,strək-chər }
- Cassegrain antenna** [ELECTROMAG] A microwave antenna in which the feed radiator is mounted at or near the surface of the main reflector and aimed at a mirror at the focus; energy from the feed first illuminates the mirror, then spreads outward to illuminate the main reflector. { kas-gran an'ten-ə }
- cassette** [ENG ACOUS] A small, compact container that holds a magnetic tape and can be readily inserted into a matching tape recorder for recording or playback; the tape passes from one hub within the container to the other hub. { ka'set }
- cassette cartridge system** [COMPUT SCI] An input system often used in computers; its low cost and ease in mounting often offset its slow access time. { ka'set ,kär-triŋ ,sis-təm }
- cassette memory** [COMPUT SCI] A removable magnetic tape cassette that stores computer programs and data. { ka'set 'mem-rē }
- catalog** [COMPUT SCI] **1.** All the indexes to data sets or files in a system. **2.** The index to all other indexes; the master index. **3.** To add an entry to an index or to build an entire new index. **4.** A list of items in a data storage device, usually



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arranged so that a particular kind of information  
can be located easily. { 'kad-əl,äg }

**catalog-order device** [ELECTR] A logic circuit el-  
ement that is readily obtainable from a manu-  
facturer, and can be combined with other such  
elements to provide a wide variety of logic  
circuits. { 'kad-əl,äg 'lör-där dl'vīs }

**catastrophic error** [COMPUT SCI] A situation in  
which so many errors are detected in a computer  
program that its compilation or execution is au-  
tomatically terminated. { 'kad-əl'sträf-ik 'er-ər }

**catastrophic failure** [ENG] 1. A sudden failure  
without warning, as opposed to degradation  
failure. 2. A failure whose occurrence can pre-  
vent the satisfactory performance of an entire  
assembly or system. { 'kad-əl'sträf-ik 'fāl-yər }

**catcher** [ELECTR] Electrode in a velocity-  
modulated vacuum tube on which the spaced  
electron groups induce a signal; the output of  
the tube is taken from this element. { 'kæch-ər }

**catching diode** [ELECTR] Diode connected to act  
as a short circuit when its anode becomes  
positive; the diode then prevents the voltage of  
a circuit terminal from rising above the diode  
cathode voltage. { 'kæch-ig ,di,əd }

**categorization** [COMPUT SCI] Process of separ-  
ating multiple addressed messages to form  
individual messages for singular addresses.  
{ 'kad-ə-gə-rə'zā-shən }

**catena** [COMPUT SCI] A series of data items that  
appears in a chained list. { kə'tē-nə }

**catenate** [COMPUT SCI] To arrange a collection of  
items in a chained list or catena. { 'kat-ən,āt }

**cathode** [ELEC] The terminal at which current  
leaves a primary cell or storage battery; it is  
negative with respect to the device, and positive  
with respect to the external circuit. [ELECTR]  
1. The primary source of electrons in an electron  
tube; in directly heated tubes the filament is  
the cathode, and in indirectly heated tubes  
a coated metal cathode surrounds a heater.  
Designated K. Also known as negative electrode.  
2. The terminal of a semiconductor diode that  
is negative with respect to the other terminal  
when the diode is biased in the forward direction.  
{ 'kath,əd }

**cathode bias** [ELECTR] Bias obtained by placing  
a resistor in the common cathode return circuit,  
between cathode and ground; flow of electrode  
currents through this resistor produces a voltage  
drop that serves to make the control grid negative  
with respect to the cathode. { 'kath,əd ,bī-as }

**cathode-coupled amplifier** [ELECTR] A cascade  
amplifier in which the coupling between two  
stages is provided by a common cathode resistor.  
{ 'kath,əd ;kəp-əld 'am-plā,fi-ər }

**cathode coupling** [ELECTR] Use of an input or  
output element in the cathode circuit for  
coupling energy to another stage. { 'kath,əd  
,kəp-lig }

**cathode crater** [ELECTR] A depression formed in  
the surface of a cathode by sputtering. { 'kath  
,əd ,krād-ər }

**cathode dark space** [ELECTR] The relatively non-  
luminous region between the cathode glow and

the negative flow in a glow-discharge cold-  
cathode tube. Also known as Crookes dark space;  
Hittorf dark space. { 'kath,əd 'därk ,spās }

**cathode disintegration** [ELECTR] The destruction  
of the active area of a cathode by positive-ion  
bombardment. { 'kath,əd dis-int-ə-grā-shən }

**cathode drop** [ELECTR] The voltage between the  
arc stream and the cathode of a glow-discharge  
tube. Also known as cathode fall. { 'kath,əd  
,dröp }

**cathode emission** [ELECTR] A process whereby  
electrons are emitted from the cathode structure.  
{ 'kath,əd i'mish-ən }

**cathode fall** See cathode drop. { 'kath,əd ,fól }

**cathode follower** [ELECTR] A vacuum-tube circuit  
in which the input signal is applied between the  
control grid and ground, and the load is  
connected between the cathode and ground. Also  
known as grounded-anode amplifier; grounded-  
plate amplifier. { 'kath,əd ,fāl-ə-wər }

**cathode glow** [ELECTR] The luminous glow that  
covers all or part of the cathode in a glow-  
discharge cold-cathode tube. { 'kath,əd ,glō }

**cathode interface capacitance** [ELECTR] A ca-  
pacitance which, when connected in parallel with  
an appropriate resistance, forms an impedance  
approximately equal to the cathode interface  
impedance. Also known as layer capacitance.  
{ 'kath,əd 'in-tər,fās kə'pas-əd-əns }

**cathode interface impedance** [ELECTR] The  
impedance between the cathode base and  
coating in an electron tube, due to a high-  
resistivity layer or a poor mechanical bond. Also  
known as layer impedance. { 'kath,əd 'in-tər  
,fās im'pēd-əns }

**cathode keying** [ELECTR] Transmitter keying by  
means of a key in the cathode lead of the keyed  
vacuum-tube stage, opening the direct-current  
circuits for the grid and anode simultaneously.  
{ 'kath,əd ,kē-ig }

**cathode layers** [ELECTR] One or more faint layers  
next to, and on the anode side of, the Aston  
dark space in a glow-discharge tube. { 'kath,əd  
,lā-ərz }

**cathode modulation** [ELECTR] Amplitude modu-  
lation accomplished by applying the modulating  
voltage to the cathode circuit of an electron  
tube in which the carrier is present. { 'kath,əd  
,mäj-ə'lā-shən }

**cathode ray** [ELECTR] A stream of electrons, such  
as that emitted by a heated filament in a tube,  
or that emitted by the cathode of a gas-discharge  
tube when the cathode is bombarded by positive  
ions. { 'kath,əd ,rā }

**cathode-ray oscillograph** [ELECTR] A cathode-  
ray oscilloscope in which a photographic or other  
permanent record is produced by the electron  
beam of the cathode-ray tube. { 'kath,əd ,rā  
,ə'sil-ə-graf }

**cathode-ray oscilloscope** [ELECTR] A test instru-  
ment that uses a cathode-ray tube to make  
visible on a fluorescent screen the instantaneous  
values and waveforms of electrical quantities  
that are rapidly varying as a function of time or  
another quantity. Abbreviated CRO. Also known

## cathode-ray storage tube

- as oscilloscope; scope. { 'kath,əd |rā ä'sil-ə ,sköp }
- cathode-ray storage tube** [ELECTR] A storage tube in which the information is written by means of a cathode-ray beam. { 'kath,əd |rā 'stör-ij ,tüb }
- cathode-ray tube** [ELECTR] An electron tube in which a beam of electrons can be focused to a small area and varied in position and intensity on a surface. Abbreviated CRT. Originally known as Braun tube; also known as electron-ray tube. { 'kath,əd |rā ,tüb }
- cathode-ray tuning indicator** [ELECTR] A small cathode-ray tube having a fluorescent pattern whose size varies with the voltage applied to the grid; used in radio receivers to indicate accuracy of tuning and as a modulation indicator in some tape recorders. Also known as electric eye; electron-ray indicator; magic eye; tuning eye. { 'kath,əd |rā 'tün-ig in-də'kād-ər }
- cathode-ray voltmeter** [ELEC] An instrument consisting of a cathode-ray tube of known sensitivity, whose deflection can be used to measure voltages. { 'kath,əd |rā 'völt,mēd-ər }
- cathode resistor** [ELECTR] A resistor used in the cathode circuit of a vacuum tube, having a resistance value such that the voltage drop across it due to tube current provides the correct negative grid bias for the tube. { 'kath,əd ri'zist-ər }
- cathode spot** [ELECTR] The small cathode area from which an arc appears to originate in a discharge tube. { 'kath,əd ,spät }
- cathode sputtering** *See* sputtering. { 'kath,əd 'spəd-ə-riŋ }
- cathodoluminescence** [ELECTR] Luminescence produced when high-velocity electrons bombard a metal in vacuum, thus vaporizing small amounts of the metal in an excited state, which amounts emit radiation characteristic of the metal. Also known as electronoluminescence. { 'kath-ə,dō,lüm-ə'nes-əns }
- cathodophosphorescence** [ELECTR] Phosphorescence produced when high-velocity electrons bombard a metal in a vacuum. { 'kath-ə,dō ,fas-fə'res-əns }
- CATT** *See* controlled avalanche transit-time triode. { kat }
- CATV** *See* cable television.
- catwhisker** [ELECTR] A sharply pointed, flexible wire used to make contact with the surface of a semiconductor crystal at a point that provides rectification. { 'kat,wis-kər }
- Cauer filter** *See* elliptic-integral filter. { 'käu-ər ,fil-tər }
- Cauer form** [ELEC] A continued fraction expansion of the impedance used in the network synthesis for a driving point function resulting in a ladder network. { 'käu-ər ,förm }
- causal system** [CONT SYS] A system whose response to an input does not depend on values of the input at later times. Also known as nonanticipatory system, physical system. { 'kô-zəl ,sis-təm }
- cautious control** [CONT SYS] A control law for a stochastic adaptive control system which hedges and uses lower gain when the estimates are uncertain. { 'kô-shəs kən'trôl }
- cavity** *See* cavity resonator. { 'kav-əd-ē }
- cavity coupling** [ELECTROMAG] The extraction of electromagnetic energy from a resonant cavity, either waveguide or coaxial, using loops, probes, or apertures. { 'kav-əd-ē ,kəp-liŋ }
- cavity filter** [ELECTROMAG] A microwave filter that uses quarter-wavelength-coupled cavities inserted in waveguides or coaxial lines to provide band-pass or other response characteristics at frequencies in the gigahertz range. { 'kav-əd-ē ,fil-tər }
- cavity frequency meter** [ENG] A device that employs a cavity resonator to measure microwave frequencies. { 'kav-əd-ē 'frē-kwən-sē ,mēd-ər }
- cavity impedance** [ELECTR] The impedance of the cavity of a microwave tube which appears across the gap between the cathode and the anode. { 'kav-əd-ē im'pēd-əns }
- cavity magnetron** [ELECTR] A magnetron having a number of resonant cavities forming the anode; used as a microwave oscillator. { 'kav-əd-ē 'mag-nə,träŋ }
- cavity oscillator** [ELECTR] An ultra-high-frequency oscillator whose frequency is controlled by a cavity resonator. { 'kav-əd-ē 'äs-ə,lād-ər }
- cavity resonance** [ELECTROMAG] The resonant oscillation of the electromagnetic field in a cavity. [ENG ACOUS] The natural resonant vibration of a loudspeaker baffle; if in the audio range, it is evident as unpleasant emphasis of sounds at that frequency. { 'kav-əd-ē 'rez-ə-nəns }
- cavity resonator** [ELECTROMAG] A space totally enclosed by a metallic conductor and excited in such a way that it becomes a source of electromagnetic oscillations. Also known as cavity; microwave cavity; microwave resonance cavity; resonant cavity; resonant chamber; resonant element; rhumbatron; tuned cavity; waveguide resonator. { 'kav-əd-ē 'rez-ən,əd-ər }
- cavity tuning** [ELECTROMAG] Use of an adjustable cavity resonator as a tuned circuit in an oscillator or amplifier, with tuning usually achieved by moving a metal plunger in or out of the cavity to change the volume, and hence the resonant frequency of the cavity. { 'kav-əd-ē ,tün-ŋ }
- cavity-type diode amplifier** *See* diode amplifier. { 'kav-əd-ē ,tɪp'di,dō ,am-plə,fī-ər }
- CAW** *See* channel address word.
- C band** [COMMUN] A band of radio frequencies extending from 4 to 8 gigahertz. { 'sē ,band }
- C-band fixed satellite service** [COMMUN] Satellite communication at frequencies in and near the C band, with the uplink frequency in a band from 5.85 to 7.075 gigahertz and the downlink frequency in bands from 3.4 to 4.2 gigahertz and 4.5 to 4.8 gigahertz. { 'sē ,band ,fiks't |səd-ə,lit ,sət-vəs }
- C-band waveguide** [ELECTROMAG] A rectangular waveguide, with dimensions 3.48 by 1.58 centimeters, which is used to excite only the dominant mode (TE<sub>01</sub>) for wavelengths in the

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**C battery** [ELEC] The battery that supplies the steady bias voltage required by the control-grid electrodes of electron tubes in battery-operated equipment. Also known as grid battery. { 'sē ,bād-ə-rē }

**CBC** See cipher block chaining.

**C bias** See grid bias. { 'sē ,bī-əs }

**CBX** See computerized branch exchange.

**CCD** See charge-coupled device.

**CCIS** See common-channel interoffice signaling.

**CCIT 2 code** [COMMUN] A printing-telegraph code in which each character is represented by five binary digits. Also known as international telegraph alphabet; International Telegraphic Consultative Committee code 2. { ,sē ,sē ,ī ,tē 'tū ,kōd }

**CCTV** See closed-circuit television.

**CCU** See communications control unit.

**CCW** See channel command word.

**CD** See compact disk.

**CD-4 sound** See compatible discrete four-channel sound. { ,sē ,dē 'fōr ,saund }

**C-display** [ELECTR] A radar display format in which targets appear as spots with azimuth angle as the horizontal axis, and elevation angle as the vertical. Also known as C-indicator; C-scan; C-scope. { 'sē di'splā }

**CDM** See code-division multiplex.

**CDMA** See code-division multiple access.

**CD-R** [COMMUN] A compact-disk format that allows users to record audio or other digital data in such a way that the recording is permanent (nonerasable) and may be read indefinitely. Derived from compact-disk recordable. Also known as compact-disk write-once (CD-WO).

**CD-ROM** See compact-disk read-only memory. { ,sē ,dē 'rām }

**CD-RW** [COMMUN] A compact-disk format that allows audio or other digital data to be written, read, erased, and rewritten. Derived from compact-disk rewritable. Also known as compact-disk erasable.

**CDTV** See conventional definition television.

**CD-WO** See CD-R.

**cell** [COMPUT SCI] 1. An elementary unit of data storage. 2. In a spreadsheet, the intersection of a row and a column. [ELEC] A single unit of a battery. { 'sel }

**cell address** [COMPUT SCI] A combination of a letter and a number that specifies the column and row in which a cell is located on a spreadsheet. { 'sel ,ədres }

**cellar** See push-down storage. { 'sel-ər }

**cell pointer** [COMPUT SCI] A rectangular highlight that indicates the active cell in a spreadsheet program. { 'sel ,pōint-ər }

**cell protection** [COMPUT SCI] A format applied to a cell or range of cells in a spreadsheet, or to the

entire spreadsheet, that prevents the contents of the cells in question from being altered. { 'sel ,prə ,tek-shən }

**cell reference** [COMPUT SCI] The address of a cell that contains a value that is needed to solve a formula in a spreadsheet program. { 'sel ,ref-rəns }

**cell-type tube** [ELECTR] Gas-filled radio-frequency switching tube which operates in an external resonant circuit; a tuning mechanism may be incorporated in either the external resonant circuit or the tube. { 'sel ,tīp ,tūb }

**cellular automaton** [COMPUT SCI] A theoretical model of a parallel computer which is subject to various restrictions to make practicable the formal investigation of its computing powers. [MATH] A mathematical construction consisting of a system of entities, called cells, whose temporal evolution is governed by a collection of rules, so that its behavior over time may appear highly complex or chaotic. { 'sel-yə-lər ,ō'tām-ə-tən }

**cellular chain** [COMPUT SCI] A chain which is not allowed to cross a cell boundary. { 'sel-yə-lər 'chān }

**cellular horn** See multicellular horn. { 'sel-yə-lər 'hōrn }

**cellular mobile radio** [COMMUN] A system that serves portable and mobile radio receivers in which the service area is subdivided into multiple cells or zones, and unique radio channel frequencies are assigned to each cell. { 'sel-yə-lər 'mō-bəl 'rād-ē-ō }

**cellular multilist** [COMPUT SCI] A type of multilist organization composed of cellular chains. { 'sel-yə-lər 'məl-tī ,līst }

**cellular splitting** [COMPUT SCI] A method of adding records to a file in which the records are grouped into cells and each cell is divided into two when it becomes full. { 'sel-yə-lər 'splīd-īŋ }

**CELP coder** See code-excited linear predictive coder. { ,sē ,ē ,el 'pē ,kōd-ər or 'selp ,kōd-ər }

**center-coupled loop** [ELECTR] Coupling loop in the center of one of the resonant cavities of a multicavity magnetron. { 'sen-tər ,kup-əld 'lūp }

**center frequency** See carrier frequency. { 'sen-tər 'frē-kwən-sē }

**centering control** [ELECTR] One of the two controls used for positioning the image on the screen of a cathode-ray tube; either the horizontal centering control or the vertical centering control. { 'sen-tə-rīŋ kən'trōl }

**center line** See stroke center line. { 'sen-tər ,līn }

**center loading** [ELECTROMAG] Alteration of the resonant frequency of a transmitting antenna by inserting an inductance or capacitance about halfway between the feed point and the end of the antenna. { 'sen-tər 'lōd-īŋ }

**center tap** [ELEC] A terminal at the electrical midpoint of a resistor, coil, or other device. Abbreviated CT. { 'sen-tər ,təp }

**centimetric waves** [COMMUN] Microwaves having wavelengths between 1 and 10 centimeters, corresponding to frequencies between 3 and 30 gigahertz. { ,sent-ə ,me-trīk 'wāvz }

## central-battery system

**central-battery system** [COMMUN] A telephone or telegraph system which obtains all the energy for signaling (and for speaking, in the case of the telephone) from a single battery of secondary cells located at the main exchange. { 'sen-trəl 'bəd-ə-rē ,sis-təm }

**central control** [SYS ENG] Control exercised over an extensive and complicated system from a single center. { 'sen-trəl kən'trōl }

**centralized configuration** See star network. { 'sen-trə,līzd kən,fig-yə'rā-shən }

**centralized database** [COMPUT SCI] A database at a single physical location, usually employed in conjunction with centralized data processing. { 'sen-trə,līzd 'dād-ə ,bās }

**centralized data processing** [COMPUT SCI] The processing of all the data concerned with a given activity at one place, usually with fixed equipment within one building. { 'sen-trə,līzd 'dād-ə 'prās,əs-iŋ }

**central office** [COMMUN] A switching unit, installed in a telephone system serving the general public, having the necessary equipment and operating arrangements for terminating and interconnecting lines and trunks. Also known as telephone central office. { 'sen-trəl 'ō-fās }

**central office line** See subscriber line. { 'sen-trəl 'ō-fās ,līn }

**central processing unit** [COMPUT SCI] The part of a computer containing the circuits required to interpret and execute the instructions. Abbreviated CPU. { 'sen-trəl 'prās,əs-iŋ ,yü-nət }

**central-processing-unit time** [COMPUT SCI] The time actually required to process a set of instructions in the logic unit of a computer. { 'sen-trəl 'prās,əs-iŋ ,yü-nət ,tīm }

**central terminal** [COMPUT SCI] A communication device which queues tellers' requests for processing and which channels answers to the consoles originating the transactions. { 'sen-trəl 'tər-mən-əl }

**centrifugal cutout** [ELEC] A switch that is opened by centrifugal force and is usually closed by a spring when the centrifugal force is reduced. { 'sen'trif-ə-gəl 'kəd,aut }

**centroid** [NAV] In radar, the estimate of a contact's position as a single point, whereas the echoes may have occupied adjacent beam positions and-or range cells on successive pulses; the result of a centroiding algorithm in a radar contact generator. { 'sen,troid }

**centroid of asymptotes** [CONT SYS] The intersection of asymptotes in a root-locus diagram. { 'sen,troid əv 'as-əm,tōd-ēz }

**cepstrum vocoder** [ENG ACOUS] A digital device for reproducing speech in which samples of the cepstrum of speech, together with pitch information, are transmitted to the receiver, and are then converted into an impulse response that is convolved with an impulse train generated from the pitch information. { 'sep-trəm 'vō 'kōd-ər }

**ceramic amplifier** [ELECTR] An amplifier that utilizes the piezoelectric properties of semiconductors such as silicon. { sə'ram-ik 'am-plə,fī-ər }

**ceramic-based microcircuit** [ELECTR] A micro-miniature circuit printed on a ceramic substrate. { sə'ram-ik,bäst 'mī-krō,sər-kət }

**ceramic capacitor** [ELEC] A capacitor whose dielectric is a ceramic material such as steatite or barium titanate, the composition of which can be varied to give a wide range of temperature coefficients. { sə'ram-ik kə'pas-əd-ər }

**ceramic cartridge** [ENG ACOUS] A device containing a piezoelectric ceramic element, used in phonograph pickups and microphones. { sə'ram-ik 'kär-trij }

**ceramic earphones** See crystal headphones. { sə'ram-ik 'ir,fōnz }

**ceramic filter** [ELECTR] A type of mechanical filter that uses a series of resonant ceramic disks to obtain a band-pass response. { sə'ram-ik 'fil-tər }

**ceramic microphone** [ENG ACOUS] A microphone using a ceramic cartridge. { sə'ram-ik 'mī-krə,fōn }

**ceramic pickup** [ENG ACOUS] A phonograph pickup using a ceramic cartridge. { sə'ram-ik 'pik-əp }

**ceramic transducer** See electrostriction transducer. { sə'ram-ik tranz'dü-sər }

**ceramic tube** [ELECTR] An electron tube having a ceramic envelope capable of withstanding operating temperatures over 500°C, as required during reentry of guided missiles. { sə'ram-ik 'tüb }

**ceranograph** [ENG] An instrument that detects radio waves generated by lightning discharges and records their occurrence. { sə'rōn-ə,graf }

**Cerenkov rebatron radiator** [ELECTR] Device in which a tightly bunched, velocity-modulated electron beam is passed through a hole in a dielectric; the reaction between the higher velocity of the electrons passing through the hole and the slower velocity of the electromagnetic energy passing through the dielectric results in radiation at some frequency higher than the frequency of modulation of the electron beam. { ch'reŋ-kəf;rē-bə,trän 'rād-ē,əd-ər }

**cermet resistor** [ELEC] A metal-glaze resistor, consisting of a mixture of finely powdered precious metals and insulating materials fired onto a ceramic substrate. { 'sər,met rī'zīs-tər }

**certainty equivalence control** [CONT SYS] An optimal control law for a stochastic adaptive control system which is obtained by solving the control problem in the case of known parameters and substituting the known parameters with their estimates. { 'sərt-ən-tē 'ikwiv-ə-ləns kən'trōl }

**certificate** [COMMUN] A data record containing an identification, a digital signature from a third party who is believed to be trustworthy, attesting to the authenticity of the identity, and an encryption key which provides a basis for two unknown entities to establish a shared encryption. { sərt'if-i-kət }

**cesium-antimonide photocathode** [ELECTR] A photocathode obtained by exposing a thin layer of antimony to cesium vapor at elevated temperatures; has a maximum sensitivity in the

[ELECTR] A micro-  
bramic substrate.

capacitor whose dielectric  
is such as steatite or  
one of which can be  
used for temperature  
control.

[ELECTR] A device con-  
sisting of an element, used  
for microphones.

earpiece headphones.

mechanical filter  
ceramic disks  
see. [sə'ram-ik]

[ELECTR] A micro-  
graph. [sə'ram-ik]

A phonograph  
see. [sə'ram-ik]

restriction trans-  
mission.

ion tube having  
a high withstanding  
voltage, as required  
for X-rays. [sə'ram-ik]

element that detects  
ionizing discharges  
see rón-ò,graf

[ELECTR] Device in  
which a city-modulated  
signal is applied to  
a hole in a cathode  
to produce the higher  
order harmonics  
through the hole  
of the cathode.  
The electromagnetic  
radiation results in  
a higher than the  
electron beam  
current.

glaze resistor,  
resistors, finely  
powdered  
materials fired  
in a vacuum.  
[ri'zist-òr]

[ELECTR] An op-  
erative control  
system for  
controlling the control  
parameters and  
variables with their  
respective control  
elements containing  
information from a  
remote trustworthy,  
secure identity,  
provides a basis  
for establishing a shared

mode [ELECTR]  
operating a thin  
film or at elevated  
temperature. In the  
sensitivity in the

blue and ultraviolet regions of the spectrum.  
[sè-zè-əm 'an-tò-mà,nîd ,fòd-ò'kath,òd]

**cesium-beam sputter source** [ELECTR] A source  
of negative ions in which a beam of positive  
cesium ions, accelerated through a potential dif-  
ference on 20-30 kilovolts, sputters the cesium-  
coated inner surface of a hollow cone fabricated  
from or containing the element whose negative  
ion is required, and an appreciable fraction  
of the negative ions leaving the surface are  
extracted from the rear hole of the sputter cone.  
[sè-zè-əm ,bèm 'spòd-òr ,sòrs]

**cesium-beam tube** See cesium electron tube.  
[sè-zè-əm ,bèm ,tüb]

**cesium electron tube** [ELECTR] An electronic de-  
vice used as an atomic clock, producing electro-  
magnetic energy that is accurate and stable  
in frequency. Also known as cesium beam tube.  
[sè-zè-əm 'lèk,trán ,tüb]

**cesium hollow cathode** [ELECTR] A cathode in  
which cesium is heated at the bottom of a  
cylinder serving as the cathode of an electron  
tube, to give current densities that can be as  
high as 800 amperes per square centimeter.  
[sè-zè-əm 'hól-ò 'ka,thòd]

**cesium magnetometer** [ENG] A magnetometer  
that uses a cesium atomic-beam resonator as a  
frequency standard in a circuit that detects very  
small variations in magnetic fields. [sè-zè-əm  
'mag-nò'tám-òd-òr]

**cesium phototube** [ELECTR] A phototube having  
a cesium-coated cathode; maximum sensitiv-  
ity in the infrared portion of the spectrum.  
[sè-zè-əm 'fòd-ò,tüb]

**cesium thermionic converter** [ELECTR] A  
thermionic diode in which cesium vapor is  
stored between the plates to neutralize space  
charge and to lower the work function of the  
emitter. [sè-zè-əm thòr-mè'án-ik kón'vòrd-òr]

**cesium-vapor lamp** [ELECTR] A lamp in which  
light is produced by the passage of current  
between two electrodes in ionized cesium vapor.  
[sè-zè-əm 'vā-pər ,lɑmp]

**cesium-vapor Penning source** [ELECTR] A con-  
ventional Penning source modified for negative-  
ion generation through the introduction of a  
third, sputter cathode, made from or containing  
the element of interest, which is the source of  
negative ions, and through the introduction of  
cesium vapor into the arc chamber. [sè-zè-əm  
'vā-pər 'pen-ij ,sòrs]

**cesium-vapor rectifier** [ELECTR] A gas tube in  
which cesium vapor serves as the conducting  
gas and a condensed monatomic layer of cesium  
serves as the cathode coating. [sè-zè-əm  
'vā-pər 'rek-tə,fai-òr]

**CFIA** See component-failure-impact analysis.

**CGI** See common gateway interface.

**CGI script** [COMPUT SCI] A program, written in a  
language such as Perl, that is used for creating  
interactive Web pages; for example, it allows a  
Web server to process a request from a user,  
communicate with a database, and reply to the  
user by creating a Web page. [sè]jè't ,skript]

**CGM** See computer graphics metafile.

**chad** [COMPUT SCI] The piece of material re-  
moved when forming a hole or notch in a punched  
tape or punched card. Also known as chip.  
[chad]

**chaff** [ELECTROMAG] Reflective particulate matter,  
such as tiny strips of coated films or of metallic  
foil, that can be dispensed by aircraft in the  
airspace covered by an enemy radar, so as to  
create such an echo density that echoes of  
interest to that radar are obscured or the radar is  
distracted by the chaff return. [chaf]

**chain** [COMMUN] A network of radio, television,  
radar, navigation, or other similar stations con-  
nected by telephone lines, coaxial cables, or  
radio relay links so all can operate as a group for  
broadcast purposes, communication purposes,  
or determination of position. [COMPUT SCI] 1. A  
series of data or other items linked together in  
some way. 2. A sequence of binary digits used  
to construct a code. [ELECTR] A series of ampli-  
fiers in a transmitter, achieving a higher overall  
gain than any one amplifier could reasonably  
achieve. [chān]

**chain code** [COMPUT SCI] A binary code consisting  
of a cyclic sequence of some or all of the possible  
binary words at a given length such that each  
word is derived from the previous one by moving  
the binary digits one position to the left, dropping  
the leading bit, and inserting a new bit at the end,  
in such a way that no word recurs before the cycle  
is complete. [chān ,kòd]

**chain command** [COMPUT SCI] Any input/output  
command in a sequence of input/output com-  
mands such as WRITE, READ, SENSE. [chān  
kò'mɑnd]

**chain data flag** [COMPUT SCI] A value of 1 given  
to a specific bit of a channel command word,  
commonly used with scatter read or scatter write  
operations. [chān 'dad-ò ,flɑg]

**chained block encryption** [COMMUN] The use of  
a block cipher in which the bits of a given  
output block depend not only on the bits in the  
corresponding input block and in the key, but also  
on any or all prior data bits, either inputted to or  
produced during the enciphering or deciphering  
process. Also known as block chaining. [chānd  
'blɑk in'krip-shən]

**chained list** [COMPUT SCI] A collection of data  
items arranged in a sequence so that each item  
contains an address giving the location of the  
next item in a computer storage device. Also  
known as linked list. [chānd 'list]

**chained records** [COMPUT SCI] A file of records  
arranged according to the chaining method.  
[chānd 'rek-òrdz]

**chaining** [COMPUT SCI] A method of storing  
records which are not necessarily contiguous, in  
which the records are arranged in a sequence  
and each record contains means to identify its  
successor. [chān-ij]

**chaining search** [COMPUT SCI] A method of  
searching for a data item in a chained list in which  
an initial key is used to obtain the location of  
either the item sought or another item in the list,  
and the search then progresses through the chain

## chain pointer

- until the required item is obtained or the chain is completed. { 'chān-ig ,sərch }
- chain pointer** [COMPUT SCI] The part of a data item in a chained list that gives the address of the next data item. { 'chān 'pɔɪnt-ər }
- chain printer** [COMPUT SCI] A high-speed printer in which the type slugs are carried by the links of a revolving chain. { 'chān ,print-ər }
- chain printing** [COMPUT SCI] The printing of a group of linked files by placing commands at the end of each file that direct the program to continue printing the next one. { 'chān 'print-ig }
- chain radar beacon** [COMMUN] A beacon with a fast recovery time to permit simultaneous interrogation and tracking of the beacon by a number of radars. { 'chān 'rɑ,dɑr ,bē-kən }
- chain radar system** [ENG] A number of radar stations located at various sites on a missile range to enable complete radar coverage during a missile flight; the stations are linked by data and communication lines for target acquisition, target positioning, or data-recording purposes. { 'chān 'rɑ,dɑr ,sis-təm }
- challenge** [COMMUN] To cause an interrogator to transmit a signal which puts a transponder into operation. { 'chal-ənj }
- challenger** See interrogator. { 'chal-ən-jər }
- challenge-response** [COMPUT SCI] A method of identifying and authenticating persons seeking access to a computing system; each user is issued a device resembling a pocket calculator and is given a different problem to solve (the challenge), to which the calculator provides part of the answer, each time the person seeks authentication. { 'chal-ənj ri'spɑns }
- challenging signal** See interrogation. { 'chal-ən-jɪŋ ,sig-nəl }
- chance-constrained programming** [COMPUT SCI] Type of nonlinear programming wherein the deterministic constraints are replaced by their probabilistic counterparts. { 'chɑns kən'strænd 'prɔ,gram-ig }
- changed memory routine** [COMPUT SCI] A selective memory dump routine in which only those words that have been changed in the course of running a program are printed. { 'chānjɪd 'mem-rē rʊ,tɪn }
- change dump** [COMPUT SCI] A type of dump in which only those locations in a computer memory whose contents have changed since some previous event are copied. { 'chānj ,dʌmp }
- change file** [COMPUT SCI] A transaction file that is used to update a master file. { 'chānj ,fɪl }
- change of control** [COMPUT SCI] 1. A break in a series of records at which processing of the records may be interrupted and some predetermined action taken. 2. See jump. { 'chānj əv kən'trɔl }
- changeover switch** [ELEC] A means of moving a circuit from one set of connections to another. { 'chān,jō-vər ,swɪtʃ }
- change record** [COMPUT SCI] A record that is used to alter information in a corresponding

- master record. Also known as amendment record; transaction record. { 'chānj ,rek-ərd }
- change tape** [COMPUT SCI] A paper tape or magnetic tape carrying information that is to be used to update filed information; the latter is often on a master tape. Also known as transaction tape. { 'chānj ,tæp }
- channel** [COMMUN] 1. A band of radio frequencies allocated for a particular purpose; a standard broadcasting channel is 10 kilohertz wide, an FM channel is 200 kHz wide, and a television channel 6 megahertz wide. 2. A path through which electrical transmission of information takes place. [COMPUT SCI] A path along which digital or other information may flow in a computer. [ELECTR] 1. A path for a signal, as an audio amplifier may have several input channels. 2. The main current path between the source and drain electrodes in a field-effect transistor or other semiconductor device. { 'chan-əl }
- channel adapter** [COMPUT SCI] Equipment that allows devices operating at different rates of speed to be connected and data to be transferred at the slower data rate. { 'chan-əl ə,dəp-tər }
- channel address word** [COMPUT SCI] A four-byte code containing the protection key and the main storage address of the first channel command word at the start of an input/output operation. Abbreviated CAW. { 'chan-əl 'ad,res ,wɔrd }
- channel-attached device** [COMPUT SCI] Equipment that is directly connected to a computer by a channel. { 'chan-əl ə'tʌtʃ di,vɪs }
- channel bank** [ELECTR] Part of a carrier-multiplex terminal that performs the first step of modulation of the transmitting voice frequencies into a higher-frequency band, and the final step in the demodulation of the received higher-frequency band into the received voice frequencies. { 'chan-əl ,bɑŋk }
- channel capacity** [COMMUN] The maximum number of bits or other information elements that can be handled in a particular channel per unit time. { 'chan-əl kə'pəs-əd-ē }
- channel command** [COMPUT SCI] The step, equivalent to a program instruction, required to tell an input/output channel what operation is to be performed, and where the data are or should be located. { 'chan-əl kə'mænd }
- channel command word** [COMPUT SCI] A code specifying an operation, one or more flags, a count, and a storage location. Abbreviated CCW. { 'chan-əl kə'mænd ,wɔrd }
- channel configuration** [COMPUT SCI] The types, number, and logical relationships of devices connected to a given computer channel. { 'chan-əl kən,fig-yə,rə-shən }
- channel control command** [COMPUT SCI] An order to a control unit to perform a non-data input/output operation. { 'chan-əl kən'trɔl kə'mænd }
- channel design** [COMPUT SCI] The type of channel, characterized by the tasks it can perform, available to a computer. { 'chan-əl dɪ'zɪn }
- channel director** [COMPUT SCI] A unit in some very large computers that controls the

s amendment record;  
[j] ,rek-ərd }  
paper tape or mag-  
nion that is to be used  
the latter is often on  
as transaction tape

id of radio frequen-  
purpose; a standard  
kilohertz wide, an  
te, and a television

2. A path through  
ion of information  
A path along which  
on may flow in a  
th for a signal, as an  
eral input channels  
between the source  
eld-effect transistor  
ce. { 'chan-əl }

CI) Equipment that  
: different rates of  
ata to be transferred  
han-əl ə,dap-tər }  
PUT SCI) A four-byte  
n key and the main  
channel command  
t/output operation,  
l 'ad, res, wərd }  
OMPUT SCI) Equip-  
t to a computer  
ht di, vīs }

a carrier-multiplex  
first step of mod-  
voice frequencies  
and the final step  
: received higher-  
ved voice frequen-

[The maximum  
mation elements  
icular channel per  
d-ē }

!| The step, equiv-  
n, required to tell  
operation is to be  
ā are or should be

MPUT SCI) A code  
or more flags, a  
Abbreviated CCW,

IT SCI) The types,  
ps of devices con-  
nnel. { 'chan-əl }

OMPUT SCI) An or-  
perform a non-  
{ 'chan-əl kən'trōl }

he type of chan-  
; it can perform.  
an-əl di'zīn }

SCI) A unit in  
iat controls the

functioning of several channels. { 'chan-əl di  
,rek-tər }

**channel effect** [ELECTR] A leakage current flowing  
over a surface path between the collector and  
emitter in some types of transistors. { 'chan-əl  
'fekt }

**channel electron multiplier** [ELECTR] A single-  
particle detector which consists of a hollow glass  
or ceramic tube with a semiconducting inner sur-  
face; it responds to one or more primary particle  
impact events at its entrance by producing, in a  
cascade multiplication process, a charge pulse of  
typically 10<sup>4</sup>-10<sup>8</sup> electrons. { 'chan-əl |lek, trān  
'māl-tə, plī-ər }

**channel-end condition** [COMPUT SCI] A signal  
indicating that the use of an input/output  
channel is no longer required. { 'chan-əl ,end  
kən'dish-ən }

**channel FET microphone** [ENG ACOUS] A micro-  
phone in which a membrane is used as the  
gate to a field-effect transistor (FET) located just  
below it, and motion of the membrane modulates  
the current between the source and drain of  
the transistor. { 'chan-əl |fet 'mī-kro, fōn ər  
'əf, i:tē }

**channeling** [COMMUN] A type of multiplex trans-  
mission in which the separation between com-  
munication channels is accomplished through  
the use of carriers or subcarriers. { 'chan-  
əl-ŋ }

**channelization** [COMMUN] The division of a sin-  
gle wide-band (high-capacity) communications  
channel into many relatively narrow-band (lower-  
capacity) channels. { ,chan-əl-ə'zā-shən }

**channelizing** [COMMUN] The process of subdivid-  
ing a wide-band transmission facility so as to  
handle a number of different circuits requiring  
comparatively narrow bandwidths. { 'chan-əl  
,īz-ŋ }

**channel mask** [COMPUT SCI] A portion of a pro-  
gram status word indicating which channels may  
interrupt the task by their completion signals.  
{ 'chan-əl ,mask }

**channel miles** [COMMUN] The summation, in  
miles, of the electrical path of individual chan-  
nels between two points; these points may be  
connected by wire or radio, or a combination of  
both. { 'chan-əl ,mīlz }

**channel plate multiplier** See microchannel plate.  
{ 'chan-əl |plāt 'māl-tə, plī-ər }

**channel program** [COMPUT SCI] The set of steps,  
called channel commands, by means of which an  
input/output channel is controlled. { 'chan-əl  
,prō-grām }

**channel read-backward command** [COMPUT SCI]  
A command to transfer data from tape device to  
main storage while the tape is moving backward.  
{ 'chan-əl 'rēd |bak-wərd kə,mənd }

**channel read command** [COMPUT SCI] A com-  
mand to transfer data from an input/output de-  
vice to main storage. { 'chan-əl 'rēd kə'mənd }

**channel reliability** [COMMUN] The percent of time  
a channel was available for use in a specific  
direction during a specified period of time.  
{ 'chan-əl ri,li-ə'bīl-əd-ē }

**channel selector** [ELEC] A control used to tune  
in the desired channel in a radio or television  
receiver. { 'chan-əl si'lek-tər }

**channel sense command** [COMPUT SCI] A com-  
mand commonly used to denote an unusual  
condition existing in an input/output device and  
requesting more information. { 'chan-əl 'sens  
kə'mənd }

**channel shifter** [ELECTR] Radiotelephone carrier  
circuit that shifts one or two voice-frequency  
channels from normal channels to higher voice-  
frequency channels to reduce cross talk between  
channels; the channels are shifted back by a  
similar circuit at the receiving end. { 'chan-əl  
,shif-tər }

**channel skip** [COMPUT SCI] A control character  
that causes a printer to skip down to a specified  
line on a page or to the top of the next page.  
{ 'chan-əl ,skip }

**channel spacing** [COMMUN] The difference in fre-  
quency between successive radio or television  
channels. { 'chan-əl ,spās-ŋ }

**channel status table** [COMPUT SCI] A table that is  
set up by an executive program to show the status  
of the various channels that connect the central  
processing unit with peripheral units, enabling  
the program to control input/output operations.  
{ 'chan-əl 'stad-as ,tā-bəl }

**channel status word** [COMPUT SCI] A storage  
register containing the status information of  
the input/output operation which caused an  
interrupt. Abbreviated CSW. { 'chan-əl 'stad-as  
,wərd }

**channel synchronizer** [ELECTR] An electronic de-  
vice providing the proper interface between  
the central processing unit and the peripheral  
devices. { 'chan-əl 'sīŋ-kro,nīz-ər }

**channel-to-channel adapter** [COMPUT SCI] A de-  
vice which provides two computer systems with  
interchannel communications. { 'chan-əl tō  
'chan-əl ə'dap-tər }

**channel write command** [COMPUT SCI] A com-  
mand which transfers data from main storage  
to an input/output device. { 'chan-əl 'writ  
kə'mənd }

**character** [COMPUT SCI] 1. An elementary mark  
used to represent data, usually in the form of  
a graphic spatial arrangement of connected or  
adjacent strokes, such as a letter or a digit.  
2. A small collection of adjacent bits used to  
represent a piece of data, addressed and handled  
as a unit, often corresponding to a digit or letter.  
{ 'kar-ik-tər }

**character-addressable computer** [COMPUT SCI]  
A computer that processes data as single  
characters, and is therefore able to handle  
words of varying length. { 'kar-ik-tər ədres-ə-bəl  
kəm'pyüd-ər }

**character adjustment** [COMPUT SCI] An address  
modification affecting a specific number of char-  
acters of the address part of the instruction.  
{ 'kar-ik-tər ə'jəs-mənt }

**character boundary** [COMPUT SCI] In character  
recognition, a real or imaginary rectangle which  
serves as the delimiter between consecutive

## character cell

characters or successive lines on a source document. { 'kar-ik-tər ,baʊn-drē }

**character cell** [COMPUT SCI] A matrix of dots that is used to form a single character on a printer or display screen. { 'kar-ik-tər ,sel }

**character code** [COMMUN] A bit pattern assigned to a particular character in a coded character set. { 'kar-ik-tər ,kōd }

**character data type** [COMPUT SCI] A scalar data type which provides an internal representation of printable characters. { 'kar-ik-tər 'dad-ə ,tɪp }

**character density** [COMPUT SCI] The number of characters recorded per unit of length or area. Also known as record density. { 'kar-ik-tər ,den-səd-ē }

**character display terminal** [COMPUT SCI] A console that can display only alphanumeric characters, and cannot show arbitrary lines or curves. { 'kar-ik-tər dɪ'splə ,tərm-ə-nəl }

**character emitter** [COMPUT SCI] In character recognition, an electromechanical device which conveys a specimen character in the form of a time pulse or group of pulses. { 'kar-ik-tər ɪ'mɪd-ər }

**character fill** [COMPUT SCI] To fill one or more locations in a computer storage device by repeated insertion of some particular character, usually blanks or zeros. { 'kar-ik-tər ,fɪl }

**character generator** [COMPUT SCI] A hard-wired subroutine which will display alphanumeric characters on a screen. { 'kar-ik-tər ,jen-ə ,rād-ər }

**character graphics** [COMPUT SCI] A collection of special symbols that can be strung together like letters of the alphabet to generate graphics. { 'kar-ik-tər ,graf-iks }

**characteristic** [ELECTR] A graph showing how the voltage or current between two terminals of an electronic device varies with the voltage or current between two other terminals. { ,kar-ik-tə'ris-tɪk }

**characteristic frequency** [COMMUN] Frequency which can be easily identified and measured in a given emission. { ,kar-ik-tə'ris-tɪk 'frē-kwən-sē }

**characteristic impedance** [COMMUN] The impedance that, when connected to the output terminals of a transmission line of any length, makes the line appear to be infinitely long, for there are then no standing waves on the line, and the ratio of voltage to current is the same for each point on the line. Also known as surge impedance. { ,kar-ik-tə'ris-tɪk ɪm'pēd-əns }

**characteristic overflow** [COMPUT SCI] An error condition encountered when the characteristic of a floating point number exceeds the limit imposed by the hardware manufacturer. { ,kar-ik-tə'ris-tɪk 'ō-vər,flō }

**characteristic underflow** [COMPUT SCI] An error condition encountered when the characteristic of a floating point number is smaller than the smallest limit imposed by the hardware manufacturer. { ,kar-ik-tə'ris-tɪk 'ʌn-dər,flō }

**character mode** [COMPUT SCI] A mode of computer operation in which only text is displayed. { 'kar-ik-tər ,mōd }

**character-oriented computer** [COMPUT SCI] A computer in which the locations of individual characters, rather than words, can be addressed. { 'kar-ik-tər ʃɔr-ē ,en-təd kəm ,pyūd-ər }

**character-oriented protocol** See byte-oriented protocol. { 'kar-ik-tər ,ɔr-ē ,ent-əd 'prōd-ə ,kɒl }

**character outline** [COMPUT SCI] The graphic pattern formed by the stroke edges of a printed or handwritten character in character recognition. { 'kar-ik-tər 'aʊt,lɪn }

**character reader** [COMPUT SCI] In character recognition, any device capable of locating, identifying, and translating into machine code the handwritten or printed data appearing on a source document. { 'kar-ik-tər ,rēd-ər }

**character recognition** [COMPUT SCI] The technology of using a machine to sense and encode into a machine language the characters which are originally written or printed by human beings. { 'kar-ik-tər ,rek-ɪg'nɪʃ-ən }

**character set** [COMMUN] A set of unique representations called characters, for example, the 26 letters of the English alphabet, the Boolean 0 and 1, the set of signals in Morse code, and the 128 characters of the USASCII. { 'kar-ik-tər ,set }

**character skew** [COMPUT SCI] In character recognition, an improper appearance of a character to be recognized, in which it appears in a tilted condition with respect to a real or imaginary horizontal base line. { 'kar-ik-tər ,skju }

**character string** [COMPUT SCI] A sequence of characters in a computer memory or other storage device. Also known as alphabetic string. { 'kar-ik-tər 'strɪŋ }

**character string constant** [COMPUT SCI] An arbitrary combination of letters, digits, and other symbols which, in the processing of nonnumeric data involving character strings, performs a function analogous to that of a numeric constant in the processing of numeric data. { 'kar-ik-tər ,strɪŋ ,kən-stənt }

**character stroke** See stroke. { 'kar-ik-tər ,strōk }

**character style** [COMPUT SCI] In character recognition, a distinctive construction that is common to all members of a particular character set. { 'kar-ik-tər ,stɪl }

**character terminal** [COMPUT SCI] A screen that can display only text. { 'kar-ik-tər ,tər-mə-nəl }

**character-writing tube** [ELECTR] A cathode-ray tube that forms alphanumeric and symbolic characters on its screen for viewing or recording purposes. { 'kar-ik-tər ,rɪd-ɪŋ ,tüb }

**charge** [ELEC] **1.** A basic property of elementary particles of matter; the charge of an object may be a positive or negative number or zero; only integral multiples of the proton charge occur, and the charge of a body is the algebraic sum of the charges of its constituents; the value of the charge may be inferred from the Coulomb force between charged objects. Also known as electric charge, quantity of electricity. **2.** To convert electrical energy to chemical energy in a secondary battery. **3.** To feed electrical energy to a capacitor or other device that can store



[COMPUT SCI] A  
ions of individual  
can be addressed.  
( 'd-ər )  
See byte-oriented  
t-əd 'prōd-ə,kōl )  
The graphic pat-  
es of a printed or  
cter recognition.

[CI] In character  
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T SCI] An arbi-  
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performs a  
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( 'kar-ik-tər

k-tər ,strōk )  
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haracter set.

screen that  
,ər-mə-nəl )  
cathode-ray  
d symbolic  
or recording

elementary  
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r zero; only  
arge occur,  
ebraic sum  
re value of  
e Coulomb  
known as  
ity. 2. To  
energy in a  
cal energy  
can store

it. [ENG] The material or part to be heated by  
induction or dielectric heating. ( 'chārj )

**charge carrier** [SOLID STATE] A mobile conduc-  
tion electron or mobile hole in a semiconductor.  
Also known as carrier. ( 'chārj ,kar-ē-ər )

**charge collector** [ELEC] The structure within a  
battery electrode that provides a path for the  
electric current to or from the active material.  
Also known as current collector. ( 'chārj kə  
,jek-tər )

**charge conservation** See conservation of charge.  
( 'chārj ,kän-sər'vā-shən )

**charge-coupled device** [ELECTR] A semiconduc-  
tor device wherein minority charge is stored in  
a spatially defined depletion region (potential  
well) at the surface of a semiconductor and is  
moved about the surface by transferring this  
charge to similar adjacent wells. Abbreviated  
CCD. ( 'chārj ,kəp-əld di'vīs )

**charge-coupled image sensor** [ELECTR] A device  
in which charges are introduced when light  
from a scene is focused on the surface of the  
device. Image points are accessed sequentially  
to produce a television-type output signal. Also  
known as solid-state image sensor. ( 'chārj  
,kəp-əld 'im-ij ,sen-sər )

**charge-coupled memory** [COMPUT SCI] A com-  
puter memory that uses a large number of charge-  
coupled devices for data storage and retrieval.  
( 'chārj ,kəp-əld 'mem-rē )

**charge coupling** [COMPUT SCI] Transfer of all  
electric charges within a semiconductor storage  
element to a similar, nearby element by means  
of voltage manipulations. ( 'chārj ,kəp-liŋ )

**charge density** [ELEC] The charge per unit area  
on a surface or per unit volume in space. ( 'chārj  
,den-səd-ē )

**charge-exchange source** [ELECTR] A source of  
negative ions, generally negative helium ions, in  
which positive ions generated in a duoplasma-  
tron are directed through a donor canal, usually  
containing lithium vapor, where they pick up  
sequentially two electrons to form negative ions.  
( 'chārj iks,chān ,sōrs )

**charge-injection device** [ELECTR] A charge-  
transfer device used as an image sensor in which  
the image points are accessed by reference  
to their horizontal and vertical coordinates.  
Abbreviated CID. ( 'chārj in ,jek-shən di'vīs )

**charge-mass ratio** [ELEC] The ratio of the electric  
charge of a particle to its mass. ( 'chārj ,mas  
'rā-shō )

**charge quantization** [ELEC] The principle that  
the electric charge of an object must equal an  
integral multiple of a universal basic charge.  
( 'chārj ,kwān-tā'zā-shən )

**charger** See battery charger. ( 'chār-jər )

**charger-eliminator** [ELEC] A battery charger with  
a low-noise, low-impedance output which can  
either charge a storage battery or supply a dc  
load directly, without a storage battery in parallel.  
( 'chār-jər ə'lim-ə ,nād-ər )

**charge-storage transistor** [ELECTR] A transistor  
in which the collector-base junction will charge  
when forward bias is applied with the base at

a high level and the collector at a low level.  
( 'chārj ,stōr-ij tranz'is-tər )

**charge-storage tube** [ELECTR] A storage tube in  
which information is retained on a surface in the  
form of electric charges. ( 'chārj ,stōr-ij ,tüb )

**charge-storage varactor** [ELECTR] A varactor that  
uses semiconductor techniques to achieve power  
outputs above 50 watts at ultra-high and mi-  
crowave frequencies. ( 'chārj ,stōr-ij və'rak-tər )

**charge-transfer device** [ELECTR] A semiconduc-  
tor device that depends upon movements of  
stored charges between predetermined loca-  
tions, as in charge-coupled and charge-injection  
devices. ( 'chārj ,tranz-fər di'vīs )

**charging current** [ELEC] The current that flows  
into a capacitor when a voltage is first applied.  
( 'chār-ijŋ ,kər-ənt )

**chassis** [ENG] 1. A frame on which the body of an  
automobile or airplane is mounted. 2. A frame  
for mounting the working parts of a radio or other  
electronic device. ( 'chas-ē )

**chassis ground** [ELEC] A connection made to  
the metal chassis on which the components of  
a circuit are mounted, to serve as a common  
return path to the power source. ( 'chas-ē  
,graund )

**chat mode** [COMPUT SCI] A communications  
option that allows two or more computers to con-  
duct a conversation by typing in turn. ( 'chat  
,mōd )

**chat room** [COMPUT SCI] A Web site or serverspace  
on the Internet where live keyboard conversa-  
tions (usually organized around a specific topic)  
with other people occur. ( 'chat ,rūm )

**chatter** [ELEC] Prolonged undesirable opening  
and closing of electric contacts, as on a relay.  
Also known as contact chatter. [ENG ACOUS]  
Vibration of a disk-recorder cutting stylus in a  
direction other than that in which it is driven.  
( 'chad-ər )

**chattering** [CONT SYS] A mode of operation of a  
relay-type control system in which the relay swit-  
ches back and forth infinitely fast. ( 'chad-ər-  
ŋ )

**Chebyshev filter** [ELECTR] A filter in which the  
transmission frequency curve has an equal-  
ripple shape, with very small peaks and valleys.  
( 'cheb-ə-shəf ,fil-tər )

**Chebyshev filter** [ELECTR] A filter in which the  
transmission frequency curve has an equal-ripple  
shape, with very small peaks and valleys.  
( 'cheb-ə-shəf ,fil-tər )

**check** [COMPUT SCI] A test which is necessary to  
detect a mistake in computer programming or a  
computer malfunction. ( 'ček )

**check bit** [COMPUT SCI] A binary check digit.  
( 'ček ,bit )

**check box** [COMPUT SCI] In a graphical user inter-  
face, a small box on which an x or check mark  
appears when the option indicated next to the  
box is turned on, and disappears when the option  
is turned off. ( 'ček ,bāks )

**check character** [COMPUT SCI] A redundant char-  
acter used to perform a check. ( 'ček ,kar-  
ik-tər )

## check digit

**check digit** [COMPUT SCI] A redundant digit used to perform a check. { 'chek ,dij-ət }

**check indicator** [COMPUT SCI] A console device, usually a light, informing the operator that an error has occurred. { 'chek ,in-də,kād-ər }

**check indicator instruction** [COMPUT SCI] A computer instruction which directs that a signal device is turned on to call the operator's attention to the fact that there is some discrepancy in the instruction now in use. { 'chek ,in-də,kād-ər in'stræk-shən }

**checking program** [COMPUT SCI] A computer program which detects and determines the nature of errors in other programs, particularly those that involve incorrect coding or punching of wrong characters. Also known as checking routine. { 'chek-ij ,prō-grəm }

**checking routine** See checking program. { 'chek-ij rū'tēn }

**check number** [COMPUT SCI] A number denoting a specific type of hardware malfunction. { 'chek ,nəm-bər }

**checkout** [COMPUT SCI] A collection of routines that are built into a compiler to test and debug programs. { 'chek ,aüt }

**checkout compiler** [COMPUT SCI] A special compiler designed specifically to test and debug programs by using checkout routines. { 'chek ,aüt kəm-pī-lər }

**checkpoint** [COMPUT SCI] That place in a routine at which the entire state of the computer (memory, registers, and so on) is written out on auxiliary storage from which it may be read back into the computer if the program is to be restarted later. [NAV] Geographical location on land or water above which the position of an aircraft in flight may be determined by observation or by electronic means. { 'chek ,póint }

**checkpoint/restart** [COMPUT SCI] The procedures for resuming a processing run after it has been halted either accidentally or deliberately. { 'chek ,póint 'rē ,stārt }

**check problem** See check routine. { 'chek ,prəb-ləm }

**check protect symbol** [COMPUT SCI] A character, usually an asterisk, that is printed in place of leading zeros in a number, such as a dollar amount on a check. { 'chek prə'tekt ,sɪm-bəl }

**check register** [COMPUT SCI] A register in which transferred data are temporarily stored so that they may be compared with a second transfer of the same data, to verify the accuracy of the transfer. { 'chek ,rej-ə-stər }

**check routine** [COMPUT SCI] A routine or problem designed primarily to indicate whether a fault exists in a computer, without giving detailed information on the location of the fault. Also known as check problem; test program; test routine. { 'chek rū'tēn }

**check row** [COMPUT SCI] A row (or one of two or more rows) on a paper tape which contains the cumulated sum of existing rows, column by

column, resulting in either 1 or 0 by column, thus verifying that all rows have been properly read. { 'chek ,rō }

**check sum** [COMPUT SCI] A sum of digits or numbers used in a summation check. { 'chek ,səm }

**check symbol** [COMPUT SCI] One or more digits generated by performing an arithmetic check or summation check on a data item which are then attached to the item and copied along with it through various stages of processing, allowing the check to be repeated to verify the accuracy of the copying processes. { 'chek ,sɪm-bəl }

**check word** [COMPUT SCI] A computer word, containing data from a block of records, that is joined to the block and serves as a check symbol during transfers of the block between different locations. { 'chek ,wərd }

**cheese antenna** [ELECTROMAG] An antenna having a parabolic reflector between two metal plates, dimensioned to permit propagation of more than one mode in the desired direction of polarization. { 'chēz an'ten-ə }

**chemical film dielectric** [ELEC] An extremely thin layer of material on one or both electrodes of an electrolytic capacitor, which conducts electricity in only one direction and thereby constitutes the insulating element of the capacitor. { 'kem-i-kəl ,fɪlm ,di-ə'lek-trɪk }

**chemically sensitive field-effect transistor** [ELECTR] A field-effect transistor in which the ordinary gate electrode is replaced by a chemically sensitive membrane so that the gain of the transistor depends on the concentration of chemical substances. { 'kem-ik-lē'sen-səd-iv 'fɛld ɪ'fekt tran,zɪs-tər }

**child** [COMPUT SCI] **1.** An element that follows a given element in a data structure. **2.** In object-oriented programming, a subclass. { 'chɪld }

**Child-Langmuir equation** See Child's law.

**Child-Langmuir-Schottky equation** See Child's law. { |'chɪld |lɑŋ-myūr 'shət,kē ɪ'kwā-zhən }

**child process** [COMPUT SCI] One of the subsidiary processes that branches out from the root task in the fork-join model of programming on parallel machines. { 'chɪld ,præs-es }

**Child's law** [ELECTR] A law stating that the current in a thermionic diode varies directly with the three-halves power of anode voltage and inversely with the square of the distance between the electrodes, provided the operating conditions are such that the current is limited only by the space charge. Also known as Child-Langmuir equation; Child-Langmuir-Schottky equation; Langmuir-Child equation. { 'chɪldz ,lɔ }

**chimney** [ELECTR] A pipe-like enclosure that is placed over a heat sink to improve natural upward

rod by column, thus  
seen properly read,

sum of digits or  
on check. ('chek

one or more digits  
arithmetical check or  
sum which are then  
added along with it  
processing, allowing  
to verify the accuracy of  
the work. ('sim-bəl]

computer word, con-  
sists of words, that is joined  
to check symbol during  
at different locations.

An antenna hav-  
ing two metal  
plates for propaga-  
tion of sired direction of  
the wave.

[c] An extremely  
small antenna  
which conducts  
current and thereby con-  
nects the capacitor.

**effect transistor**  
transistor in which  
the emitter is re-  
placed by a  
resistor so that the gain  
is independent of the  
emitter concentration.  
('ik-lē]sen-səd-iv

that follows a  
square law. 2. In object-  
ives. ('chıld]

Child's law.  
**on** See Child's  
law. ('kwā-zhən]

of the subsidiary  
task in the  
root task in  
working on parallel  
channels.  
ing that the cur-  
rents directly with  
the voltage and  
the distance be-  
tween the operating  
current is lim-  
ited. Also known  
as Child-Langmuir-  
Child equation.

closure that is  
natural upward

convection of heat and thereby increase the  
dissipating ability of the sink. ('chim,nē]

**chip** [COMPUT SCI] See chad. [ELECTR] 1. The  
shaped and processed semiconductor die that  
is mounted on a substrate to form a transistor,  
diode, or other semiconductor device. 2. An  
integrated microcircuit performing a significant  
number of functions and constituting a subsys-  
tem. Also known as microchip. ('chip]

**chip capacitor** [ELECTR] A single-layer or multi-  
layer monolithic capacitor constructed in chip  
form, with metallized terminations to facilitate  
direct bonding on hybrid integrated circuits.  
('chip kə'pas-əd-ər]

**chip card** See smart card. ('chip ,kərd]

**chip circuit** See large-scale integrated circuit.  
('chip ,sər-kət]

**chip resistor** [ELECTR] A thick-film resistor con-  
structed in chip form, with metallized termi-  
nations to facilitate direct bonding on hybrid  
integrated circuits. ('chip ri'ziz-tər]

**chipset** [COMPUT SCI] A number of integrated  
circuits, packaged as one unit, which perform one  
or more related functions. ('chip ,set]

**Chireix antenna** [ELECTROMAG] A phased array  
composed of two or more coplanar square loops,  
connected in series. Also known as Chireix-  
Mesny antenna. ('ki'ræks an,tən-ə]

**Chireix-Mesny antenna** See Chireix antenna.  
('ki'ræks ,mez,nē an,tən-ə]

**chirp** [COMMUN] 1. An undesirable variation in  
the frequency of a continuous-wave carrier when  
it is keyed. 2. The sound heard in a code  
receiver when the transmitted carrier frequency  
is increased linearly for the duration of a pulse  
code. ('chərp]

**chirp modulation** [COMMUN] A modulation of the  
carrier frequency from a lower to a higher fre-  
quency, or vice versa, often linearly, used in radar  
pulse compression. ('chərp məj-ə'lā-shən]

**chirp radar** [ENG] Radar in which a swept-  
frequency signal is transmitted, received from a  
target, then compressed in time to give a narrow  
pulse called the chirp signal. ('chərp ,rā,dər]

**chisel bond** [ENG] A thermocompression bond in  
which a contact wire is attached to a contact pad  
on a semiconductor chip by applying pressure  
with a chisel-shaped tool. ('chiz-əl ,bænd]

**choke** [ELEC] An inductance used in a circuit to  
present a high impedance to frequencies above  
a specified frequency range without appreciably  
limiting the flow of direct current. Also known  
as choke coil. [ELECTROMAG] A groove or other  
discontinuity in a waveguide surface so shaped  
and dimensioned as to impede the passage of  
guided waves within a limited frequency range.  
('chök]

**choke coil** See choke. ('chök ,kóil]

**choke coupling** [ELECTROMAG] Coupling between  
two parts of a waveguide system that are not  
in direct mechanical contact with each other.  
('chök ,kəp-lɪŋ]

**choke filter** See choke input filter. ('chök ,fil-tər]

**choke flange** [ELECTROMAG] A waveguide flange  
having in its mating surface a slot (choke) so

shaped and dimensioned as to restrict leakage  
of microwave energy within a limited frequency  
range. ('chök ,flaŋ]

**choke input filter** [ELEC] A power-supply filter in  
which the first filter element is a series choke.  
Also known as choke filter. ('chök 'in,püt  
,fil-tər]

**choke joint** [ELECTROMAG] A connection between  
two waveguides that uses two mating choke  
flanges to provide effective electrical continuity  
without metallic continuity at the inner walls of  
the waveguide. ('chök ,jóint]

**choke piston** [ELECTROMAG] A piston in which  
there is no metallic contact with the walls of the  
waveguide at the edges of the reflecting surface;  
the short circuit for high-frequency currents is  
achieved by a choke system. Also known as  
noncontacting piston; noncontacting plunger.  
('chök ,plis-tən]

**chopper amplifier** [ELECTR] A carrier amplifier in  
which the direct-current input is filtered by a low-  
pass filter, then converted into a square-wave  
alternating-current signal by either one or two  
choppers. ('chöp-ər 'am-plə,fī-ər]

**chopper-stabilized amplifier** [ELECTR] A direct-  
current amplifier in which a direct-coupled am-  
plifier is in parallel with a chopper amplifier.  
('chöp-ər 'stā-bə,līzəd 'am-plə,fī-ər]

**chopper transistor** [ELECTR] A bipolar or field-  
effect transistor operated as a repetitive "on/off"  
switch to produce square-wave modulation of an  
input signal. ('chöp-ər tran'ziz-tər]

**chopping** [ELECTR] The removal, by electronic  
means, of one or both extremities of a wave at  
a predetermined level. ('chöp-ɪŋ]

**chroma band-pass amplifier** See burst amplifier.  
('krō-mə 'bænd ,pas 'am-plə,fī-ər]

**chroma control** [ELECTR] The control that adjusts  
the amplitude of the carrier chrominance signal  
fed to the chrominance demodulators in an  
analog color television receiver, so as to change  
the saturation or vividness of the hues in the  
color picture. Also known as color control; color-  
saturation control. ('krō-mə kən'tröl]

**chroma oscillator** [ELECTR] A crystal oscillator  
used in analog color television receivers to  
generate a 3 579545-megahertz signal for com-  
parison with the incoming 3 579545-megahertz  
chrominance subcarrier signal being transmit-  
ted. Also known as chrominance-subcarrier oscil-  
lator; color oscillator; color-subcarrier oscillator.  
('krō-mə 'äs-ə,lād-ər]

**chromatic aberration** [ELECTR] An electron-gun  
defect causing enlargement and blurring of the  
spot on the screen of a cathode-ray tube, be-  
cause electrons leave the cathode with different  
initial velocities and are deflected differently  
by the electron lenses and deflection coils.  
('krō'mad-ik əb-ə'rā-shən]

**chromatron** [ELECTR] A single-gun color picture  
tube having color phosphors deposited on the  
screen in strips instead of dots. Also known as  
Lawrence tube. ('krō-mə'trən]

**chrominance carrier** See chrominance subcarrier.  
('krō-mə-nəns ,kə-ē-ər]

## chrominance-carrier reference

**chrominance-carrier reference** [COMMUN] A continuous signal having the same frequency as the chrominance subcarrier in a color television system and having fixed phase with respect to the color burst; this signal is the reference with which the phase of a chrominance signal is compared for the purpose of modulation or demodulation. Also known as chrominance-subcarrier reference; color-carrier reference; color-subcarrier reference. { 'krō-mə-nəns |kar-ē-ər ,ref-rəns }

**chrominance channel** [COMMUN] Any path that is intended to carry the chrominance signal in an analog color television system. { 'krō-mə-nəns ,chan-əl }

**chrominance demodulator** [ELECTR] A demodulator used in an analog color television receiver for deriving the I and Q components of the chrominance signal from the chrominance signal and the chrominance-subcarrier frequency. Also known as chrominance-subcarrier demodulator. { 'krō-mə-nəns də'mäj-ə,lād-ər }

**chrominance frequency** [COMMUN] The frequency of the chrominance subcarrier, equal to 3.579545 megahertz. { 'krō-mə-nəns ,frē-kwən-sē }

**chrominance gain control** [ELECTR] Variable resistors in red, green, and blue matrix channels that individually adjust primary signal levels in an analog color television receiver. { 'krō-mə-nəns 'gān kən'trōl }

**chrominance modulator** [ELECTR] A modulator used in an analog color television transmitter to generate the chrominance signal from the video-frequency chrominance components and the chrominance subcarrier. Also known as chrominance-subcarrier modulator. { 'krō-mə-nəns 'mäj-ə,lād-ər }

**chrominance signal** [COMMUN] One of the two components, called the I signal and Q signal, that add together to produce the total chrominance signal in an analog color television system. Also known as carrier chrominance signal. { 'krō-mə-nəns ,sig-nəl }

**chrominance subcarrier** [COMMUN] The 3.579545-megahertz carrier whose modulation sidebands are added to the monochrome signal to convey color information in an analog color television receiver. Also known as chrominance carrier; color carrier; color subcarrier; subcarrier. { 'krō-mə-nəns səb'kar-ē-ər }

**chrominance-subcarrier demodulator** See chrominance demodulator. { 'krō-mə-nəns səb'kar-ē-ər də'mäj-ə,lād-ər }

**chrominance-subcarrier modulator** See chrominance modulator. { 'krō-mə-nəns səb'kar-ē-ər 'mäj-ə,lād-ər }

**chrominance-subcarrier oscillator** See chroma oscillator. { 'krō-mə-nəns səb'kar-ē-ər 'ās-ə,lād-ər }

**chrominance-subcarrier reference** See chrominance-carrier reference. { 'krō-mə-nəns səb'kar-ē-ər 'ref-rəns }

**chrominance video signal** [ELECTR] Voltage output from the red, green, or blue section of a color television camera or receiver matrix. { 'krō-mə-nəns 'vid-ē-ō ,sig-nəl }

**chromium dioxide tape** [ELECTR] A magnetic recording tape developed primarily to improve quality and brilliance of reproduction when used in cassettes operated at 1 7/8 inches per second (4.76 centimeters per second); requires special recorders that provide high bias. { 'krō-mē-əm dī'ak,sid 'tāp }

**chromium-gold metallizing** [ELECTR] A metal film used on a silicon or silicon oxide surface in semiconductor devices because it is not susceptible to purple plague deterioration; a layer of chromium is applied first for adherence to silicon, then a layer of chromium-gold mixture, and finally a layer of gold to which bonding contacts can be applied. { 'krō-mē-əm 'gōld 'med-əl-īz-īŋ }

**chronistor** [ELECTR] A subminiature elapsed-time indicator that uses electroplating principles to totalize operating time of equipment up to several thousand hours. { krə'nis-tər }

**chrometric encoder** [ELECTR] An encoder that uses an electronic counter to time or count electrical events and deliver in digital form a number equivalent to the input magnitude. { 'krän-ə,me-trik en'kōd-ər }

**chronopher** [ELECTR] Instrument for emitting standard time signal impulses from a standard clock or timing device. { 'krän-ə-fər }

**chronotron** [ELECTR] A device that measures millimicrosecond time intervals between pulses on a transmission line to determine the time between the events which initiated the pulses. { 'krän-ə ,trän }

**chute blades** [COMPUT SCI] Thin metal bands which form channels to the various pockets of a sorter. { 'shüt ,blādz }

**C<sup>3</sup>I** See command, control, communications, and intelligence. { 'sē 'thrē'ī }

**CID** See charge-injection device.

**CIM** See computer input from microfilm; computer-integrated manufacturing.

**cinching** [COMPUT SCI] Creases produced in magnetic tape when the supply reel is wound at low tension and suddenly stopped during playback. { 'sin-çiŋ }

**C-indicator** See C-display. { 'sē ,in-də,kād-ər }

**cipher** [COMMUN] A transposition or substitution code for transmitting secret messages. { 'sī-fər }

**cipher block chaining** [COMMUN] A technique for block chaining in which each block of ciphertext is produced by adding, through the EXCLUSIVE OR operation, the previous block of ciphertext to the current block of plaintext. Abbreviated CBC. { 'sī-fər ,bläk ,çän-īŋ }

**cipher feedback** [COMMUN] An implementation of ciphertext autokey cipher in which the leftmost *n* bits of the data encryption standard (DES) output are added by the EXCLUSIVE OR operation to *N* bits of plaintext to produce *N* bits of ciphertext (where *N* is the number of bits enciphered at one

RR] Voltage out-  
due section of  
ceiver matrix.

R] A magnetic  
rily to improve  
tion when used  
res per second  
quires special  
{'krō-mē-əm}

ELECTR] A metal  
oxide surface  
use it is not  
eterioration; a  
for adherence  
n-gold mixture,  
which bonding  
ō-mē-əm |gōld

ture elapsed-  
iting principles  
ipment up to  
s-tər }  
n encoder that  
time or count  
digital form  
ut magnitude.

for emitting  
m a standard  
fər }  
measures mil-  
en pulses on a  
time between  
ses. {'krān-ə

metal bands  
ous pockets of

nications, and

lm; computer-

duced in mag-  
wound at low  
ring playback.

ī-dā,kād-ər }  
or substitution  
ges. {'sī-fər }  
] A technique  
block of ci-  
through the  
vious block  
of plaintext.  
chān-īj }

plementation  
h the leftmost  
ard (DES) out-  
Operation to  
s of ciphertext  
phered at one

time), and these N bits of ciphertext are fed back into the algorithm by first shifting the current DES input N bits to the left, and then appending the N bits of ciphertext to the right-hand side of the shifted input to produce a new DES input used for the next iteration of the algorithm. {'sī-fər |fīd,bak }

**cipher machine** [COMMUN] Mechanical or electrical apparatus for enciphering and deciphering. {'sī-fər mə'shēn }

**ciphertext** [COMMUN] A message which has been transformed by a cipher so that it can be read only by those privy to the secrets of the cipher. {'sī-fər,tɛkst }

**ciphertext autokey cipher** [COMMUN] A stream cipher in which the cryptographic bit stream generated at a given time is determined by the ciphertext generated at earlier times. {'sī-fər ,tɛkst 'ōd-ō,kē ,sī-fər }

**ciphony** [COMMUN] A technique by which security is accomplished by converting speech into a series of on-off pulses and mixing these with the pulses supplied by a key generator; to recover the original speech, the identical key must be subtracted and the resultant on-off pulses reconverted into the original speech pattern; unauthorized listeners are unable to reconstruct the plain text unless they have an identical key generator and the daily key setting. {'sī-fə-nē }

**ciphony equipment** [ELECTR] Any equipment attached to a radio transmitter, radio receiver, or telephone for scrambling or unscrambling voice messages. {'sī-fə-nē i,kwip-mənt }

**circle diagram** [ELEC] A diagram which gives a graphical solution of equations for a transmission line, giving the input impedance of the line as a function of load impedance and electrical length of the line. {'sər-kəl |dī-ə,gram }

**circle-dot mode** [ELECTR] Mode of cathode-ray storage of binary digits in which one kind of digit is represented by a small circle of excitation of the screen, and the other kind by a similar circle with a concentric dot. {'sər-kəl |dāt ,mōd }

**circuit** [ELEC] See electric circuit. [ELECTRO-MAG] A complete wire, radio, or carrier communications channel. {'sər-kət }

**circuit analyzer** See volt-ohm-milliammeter. {'sər-kət ,an-ə ,līz-ər }

**circuit board** See printed circuit board. {'sər-kət ,bōrd }

**circuit breaker** [ELEC] An electromagnetic device that opens a circuit automatically when the current exceeds a predetermined value. {'sər-kət ,brāk-ər }

**circuit capacity** [COMMUN] Number of communications channels which can be handled by a given circuit at the same time. {'sər-kət kə'pas-əd-ē }

**circuit conditioning** [ELECTR] Test, analysis, engineering, and installation actions to upgrade a communications circuit to meet an operational requirement, includes the reduction of noise, the equalization of phase and level stability and frequency response, and the correction of impedance discontinuities, but does not in-

clude normal maintenance and repair activities. {'sər-kət kən'dish-ə-nīj }

**circuit design** [ELEC] The art of specifying the components and interconnections of an electrical network. {'sər-kət də'zīn }

**circuit diagram** [ELEC] A drawing, using standardized symbols, of the arrangement and interconnections of the conductors and components of an electrical or electronic device or installation. Also known as schematic circuit diagram; wiring diagram. {'sər-kət ,dī-ə,gram }

**circuit efficiency** [ELECTR] Of an electron tube, the power delivered to a load at the output terminals of the output circuit at a desired frequency divided by the power delivered by the electron stream to the output circuit at that frequency. {'sər-kət i'fish-ən-sē }

**circuit element** See component. {'sər-kət |el-ə-mənt }

**circuit grade** [COMMUN] A circuit rating defining the ability to carry information; grades include telegraph, voice, and broad-band. {'sər-kət ,grād }

**circuit interrupter** [ELEC] A device in a circuit breaker to remove energy from an arc in order to extinguish it. {'sər-kət ,in-tə,rəp-tər }

**circuit loading** [ELEC] Power drawn from a circuit by an electric measuring instrument, which may alter appreciably the quantity being measured. {'sər-kət ,lōd-īj }

**circuit noise** [COMMUN] In telephone practice, the noise which is brought to the receiver electrically from a telephone system, excluding noise picked up acoustically by telephone transmitters. {'sər-kət ,nōiz }

**circuit noise level** [COMMUN] Ratio of the circuit noise at that point to some arbitrary amount of circuit noise chosen as a reference; usually expressed in decibels above reference noise, signifying the reading of a circuit noise meter, or in adjusted decibels, signifying circuit noise meter reading adjusted to represent interfering effect under specified conditions. {'sər-kət ,nōiz ,lev-əl }

**circuit protection** [ELECTR] Provision for automatically preventing excess or dangerous temperatures in a conductor and limiting the amount of energy liberated when an electrical failure occurs. {'sər-kət prə'tek-shən }

**circuit reliability** [COMMUN] The percent of time a circuit was available to the user during a specified period of time. {'sər-kət ri,lī-ə'bil-əd-ē }

**circuitron** [ELECTR] Combination of active and passive components mounted in a single envelope like that used for tubes, to serve as one or more complete operating stages. {'sər-kyō ,trān }

**circuitry** [ELEC] The complete combination of circuits used in an electrical or electronic system or piece of equipment. {'sər-kə-trē }

**circuit shift** See cyclic shift. {'sər-kət ,shift }

**circuit switching** [COMMUN] 1. The method of providing communication service through a switching facility, either from local users or from other switching facilities. 2. A method of

## circuit testing

transmitting messages through a communications network in which a path from the sender to the receiver of fixed bandwidth or speed is set up for the entire duration of a communication or call. { 'sər-kət, swiç-ɪŋ }

**circuit testing** [ELEC] The testing of electric circuits to determine and locate an open circuit, or a short circuit or leakage. { 'sər-kət, tes-tɪŋ }

**circuit theory** [ELEC] The mathematical analysis of conditions and relationships in an electric circuit. Also known as electric circuit theory. { 'sər-kət, thē-ə-rē }

**circular antenna** [ELECTROMAG] A folded dipole that is bent into a circle, so the transmission line and the abutting folded ends are at opposite ends of a diameter. { 'sər-kyə-lər an'ten-ə }

**circular arc** See arc. { 'sər-kyə-lər 'ɑrk }

**circular buffering** [COMPUT SCI] A technique for receiving data in an input-output control system which uses a single buffer that appears to be organized in a circle, with data wrapping around it. { 'sər-kyə-lər 'baf-ə-rɪŋ }

**circular current** [ELEC] An electric current moving in a circular path. { 'sər-kyə-lər 'kər-ənt }

**circular file** [COMPUT SCI] An organized collection of records, generally with a high turnover, in which new records are inserted by replacing the oldest records. { 'sər-kyə-lər 'fɪl }

**circular horn** [ELECTROMAG] A circular-waveguide section that flares outward into the shape of a horn, to serve as a feed for a microwave reflector or lens. { 'sər-kyə-lər 'hɔrn }

**circular polarized loop vee** [ELECTROMAG] Airborne communications antenna with an omnidirectional radiation pattern to provide optimum near-horizon communications coverage. { 'sər-kyə-lər 'pɔ-lə,rɪzd 'lʊp,vē }

**circular polling** [COMMUN] A form of polling in which each terminal is interrogated exactly once in every pass, regardless of its level of activity. { 'sər-kyə-lər 'pɔl-ɪŋ }

**circular reference** [COMPUT SCI] A situation created by a programming error in which two or more entities each refer to the other so that the execution of the program is carried on endlessly with no resolution. { 'sər-kyə-lər 'ref-rəns }

**circular scanning** [ENG] Radar scanning in which the direction of maximum radiation describes a right circular cone. { 'sər-kyə-lər 'skan-ɪŋ }

**circular shift** See cyclic shift. { 'sər-kyə-lər 'ʃɪft }

**circular sweep generation** [ELECTR] The use of electronic circuits to provide voltage or current which causes an electron beam in a device such as a cathode-ray tube to move in a circular deflection path at constant speed. { 'sər-kyə-lər 'swēp,ʃen-ə,rā-shən }

**circular wait** See mutual deadlock. { 'sər-kyə-lər 'wāt }

**circular waveguide** [ELECTROMAG] A waveguide whose cross-sectional area is circular. { 'sər-kyə-lər 'wāv,ɡɪd }

**circulating memory** [ELECTR] A digital computer device that uses a delay line to store information in the form of a pattern of pulses in a train;

the output pulses are detected electrically, amplified, reshaped, and reinserted in the delay line at the beginning. Also known as delay-line memory; delay-line storage; circulating storage. { 'sər-kyə,lād-ɪŋ 'mem-rē }

**circulating register** [COMPUT SCI] A shift register in which data move out of one end and reenter the other end, as in a closed loop. { 'sər-kyə,lād-ɪŋ 'rej-ə-stər }

**circulating storage** See circulating memory. { 'sər-kyə,lād-ɪŋ 'stɔr-ɪj }

**circulator** [ELECTROMAG] A waveguide component having a number of terminals so arranged that energy entering one terminal is transmitted to the next adjacent terminal in a particular direction. Also known as microwave circulator. { 'sər-kyə'lād-ər }

**CISC** See complex instruction set computer. { 'sɪsk }

**citizens' band** [COMMUN] A frequency band allocated for citizens' radio service (462,550–467,425, 72–76, or 26,965–27,405 megahertz). { 'sɪt-ə-zənz 'bænd }

**citizens' radio service** [COMMUN] A radio communication service intended for private or personal radio communication, including radio signaling and control of objects by radio. { 'sɪt-ə-zənz 'rā-d-ē-ō,sər-vəs }

**cladding** [COMMUN] A plastic or glass sheath that is fused to and surrounds the core of an optical fiber. [ENG] Process of covering one material with another and bonding them together under high pressure and temperature. Also known as bonding. { 'klad-ɪŋ }

**clamp** See clamping circuit. { 'klamp }

**clammer** See direct-current restorer. { 'klamp-ər }

**clamping** [ELECTR] The introduction of a reference level that has some desired relation to a pulsed waveform, as at the negative or positive peaks. Also known as direct-current reinsertion, direct-current restoration. { 'klamp-ɪŋ }

**clamping circuit** [ELECTR] A circuit that reestablishes the direct-current level of a waveform; used in the dc-restorer stage of an analog television receiver to restore the dc component to the video signal after its loss in capacitance-coupled alternating-current amplifiers, to reestablish the average light value of the reproduced image. Also known as clamp. { 'klamp-ɪŋ,sər-kət }

**clamping diode** [ELECTR] A diode used to clamp a voltage at some point in a circuit. { 'klamp-ɪŋ,di,əd }

**clamping gripper** [CONT SYS] A robot element that uses two-link movements, parallel-jaw movements, and combination movements to grasp and handle objects. { 'klamp-ɪŋ 'ɡrɪp-ər }

**clamp-on** [COMMUN] A method of holding a call for a line that is in use and of signaling when it becomes free. { 'klamp,ɔn }

**clamp-on ammeter** See snap-on ammeter. { 'klamp,ɔn 'a,mēd-ər }

**clapper** [ELEC] A hinged or pivoted relay armature. { 'klap-ər }

**Clapp oscillator** [ELECTR] A series-tuned Colpitts oscillator, having low drift. { 'klap 'lās-ə,lād-ər }

electrically, and in the delay line as delay-line relaying storage.

A shift register and reenter loop. { 'sər-kyə }

ating memory.

guide components so arranged is transmitted in a particular wave circulator.

computer. { sisk } frequency band allocation (462 550–575 megahertz).

A radio communication system including projects by radio.

glass sheath that is used in the fabrication of an optical fiber; one material is used together under the same name. Also known as

optical fiber. { 'klamp-ər } on of a reference relation to a value or positive or negative reinforcement; np-ij }

that reestablishes the waveform; used in color television to reestablish the color image. Also known as

used to clamp the signal. { 'klamp-ij }

robot element parallel-jaw movements to grip or holding a call when it

in ammeter.

relay armature-tuned coil. { 'klap-lās-ə }

**Clark cell** [ELEC] An early form of standard cell, having 1.433 volts at 15°C, now largely replaced by the Weston standard cell as a voltage standard. { 'klärk-sel }

**class** [COMPUT SCI] In object-oriented programming, a description of the structure and operations of an object. A new class is defined by stating how it differs from an existing class. The new (more specific) class is said to inherit from the original (general) class and is referred to as a subclass of the original class. The original class is referred to as the superclass of the new class. { klas }

**class A amplifier** [ELECTR] 1. An amplifier in which the grid bias and alternating grid voltages are such that anode current in a specific tube flows at all times. 2. A transistor amplifier in which each transistor is in its active region for the entire signal cycle. { ,klas 'ä 'äm-plä,fi-ər }

**class AB amplifier** [ELECTR] 1. An amplifier in which the grid bias and alternating grid voltages are such that anode current in a specific tube flows for appreciably more than half but less than the entire electric cycle. 2. A transistor amplifier whose operation is class A for small signals and class B for large signals. { ,klas jä'bë 'äm-plä,fi-ər }

**class A modulator** [ELECTR] A class A amplifier used to supply the necessary signal power to modulate a carrier. { ,klas 'ä 'mäj-ə,läd-ər }

**class A push-pull sound track** [ENG ACOUS] Two single photographic sound tracks side by side, the transmission of one being 180° out of phase with the transmission of the other; both positive and negative halves of the sound wave are linearly recorded on each of the two tracks. { ,klas 'ä 'púsh 'púl 'saún ,trak }

**class B amplifier** [ELECTR] 1. An amplifier in which the grid bias is approximately equal to the cutoff value, so that anode current is approximately zero when no exciting grid voltage is applied, and flows for approximately half of each cycle when an alternating grid voltage is applied. 2. A transistor amplifier in which each transistor is in its active region for approximately half the signal cycle. { ,klas 'bë 'äm-plä,fi-ər }

**class B auxiliary power** [ELEC] Standby power plant to cover extended outages (days) of primary power. { ,klas 'bë 'ög'zil-yə-rë 'paür }

**class B modulator** [ELECTR] A class B amplifier used to supply the necessary signal power to modulate a carrier, usually connected in push-pull. { ,klas 'bë 'mäj-ə,läd-ər }

**class B push-pull sound track** [ENG ACOUS] Two photographic sound tracks side by side, one of which carries the positive half of the signal only, and the other the negative half, during the inoperative half-cycle, each track transmits little or no light. { ,klas 'bë 'púsh 'púl 'saún ,trak }

**class C amplifier** [ELECTR] 1. An amplifier in which the bias on the control element is appreciably greater than the cutoff value, so that the output current in each device is zero when no alternating control signal is applied, and flows

for appreciably less than half of each cycle when an alternating control signal is applied. 2. A transistor amplifier in which each transistor is in its active region for significantly less than half the signal cycle. { ,klas 'së 'äm-plä,fi-ər }

**class C auxiliary power** [ELEC] Quickstart (10–60 seconds) power unit to cover short-term outages (hours) of primary power. { ,klas 'së 'ög'zil-yə-rë 'paü-ər }

**class D amplifier** [ELECTR] A power amplifier that employs a pair of transistors that are connected in push-pull and driven to act as a switch, and a series-tuned output filter, which allows only the fundamental-frequency component of the resultant square wave to reach the load. { ,klas 'dë 'äm-plä,fi-ər }

**class D auxiliary power** [ELEC] Uninterruptible (no-break) power unit using stored energy to provide continuous power within specified voltage and frequency tolerances. { ,klas 'dë 'ög'zil-yə-rë 'paü-ər }

**class E amplifier** [ELECTR] A power amplifier that employs a single transistor driven to act as a switch, and an output filter selected to bring the drain voltage to zero at the instant the transistor is switched on. { ,klas 'ë 'äm-plä,fi-ər }

**class F amplifier** [ELECTR] A power amplifier that employs a single transistor and a multiple-resonance output circuit. { ,klas 'ef 'äm-plä,fi-ər }

**class NP problems** [COMPUT SCI] Problems that cannot necessarily be solved in polynomial time on a sequential computer but can be solved in polynomial time on a nondeterministic computer which, roughly speaking, guesses in turn each of 2<sup>N</sup> possible values of some N-bit quantity. { 'klas 'en'pë ,präb-lämz }

**class P problems** [COMPUT SCI] Problems that can be solved in polynomial time on a conventional sequential computer. { 'klas 'pë ,präb-lämz }

**class S modulator** [ELECTR] A modulator that is based on pulse-width modulation with a switching frequency several times the highest output frequency, and in which the pulse-width modulated signal is boosted to the desired power level by switching amplifiers, after which the desired audio output is obtained by a low-pass filter. { ,klas 'es 'mäj-ə,läd-ər }

**clause** [COMPUT SCI] A part of a statement in the COBOL language which may describe the structure of an elementary item, give initial values to items in independent and group work areas, or redefine data previously defined by another clause. { klöz }

**Clausius-Mosotti equation** [ELEC] An expression for the polarizability  $\gamma$  of an individual molecule in a medium which has the relative dielectric constant  $\epsilon$  and has N molecules per unit volume:  $\gamma = (3/4\pi N) [(\epsilon - 1)/(\epsilon + 2)]$  (Gaussian units). { ;klöz-ë-əs mə'zäd-ë i'kwä-zhən }

**clean and certify** [COMPUT SCI] To prepare a magnetic tape for a computer system by running it through a machine that cleans it, writes a data test pattern on it, and checks it for errors. { 'klän ən 'sərd-ə,fi }

## clean compile

- clean compile** [COMPUT SCI] Conversion of a computer program from source to object language with no detection of significant errors by the compiler; logic errors not identified by the compiler may exist. { 'klēn kam'pīl }
- clean track** [ENG ACOUS] A sound track having no leakage from other tracks. { |klēn |trak }
- cleanup** [ELECTR] Gradual disappearance of gases from an electron tube during operation, due to absorption by getter material or the tube structure. { 'klē,nəp }
- clear** [COMPUT SCI] 1. To restore a storage device, memory device, or binary stage to a prescribed state, usually that denoting zero. Also known as reset. 2. A function key on calculators, to delete an entire problem or just the last keyboard entry. { klīr }
- clear area** [COMPUT SCI] In optical character recognition, any area designated to be kept free of printing or any other extraneous markings. { 'klīr ,er-ē-ə }
- clear band** [COMPUT SCI] In character recognition, a continuous horizontal strip of blank paper which must be obtained between consecutive code lines on a source document. { 'klīr ,band }
- clear channel** [COMMUN] A standard broadcast channel in which the dominant station or stations render service over wide areas; stations are cleared of objectionable interference within their primary service areas and over all or a substantial portion of their secondary service areas. { |klīr 'chan-əl }
- clear text** [COMMUN] Text or language which conveys an intelligible meaning in the language in which it is written with no hidden meaning. { 'klīr ,tekst }
- clear-voice override** [COMMUN] The ability of a speech scrambler to receive a clear message even when the scrambler is set for scrambler operation. { |klīr ;vōis 'ō-və,rīd }
- click** [COMMUN] A short-duration electric disturbance, such as that sometimes produced by a code-sending key or a switch. [COMPUT SCI] To select an object when the pointer is touching it by pressing and quickly releasing a button on a mouse. [ENG ACOUS] A perforation in a sound track which produces a clicking sound when passed over the projector sound head. { klik }
- click filter** [ELECTR] A capacitor connected across a switch, relay, or key to lengthen the decay time from the closed to the open condition when the device is opened or closed. { 'klik ,fil-tər }
- click track** [ENG ACOUS] A sound track containing a series of clicks, which may be spaced regularly (uniform click track) or irregularly (variable click track). { 'klik ,trak }
- client** [COMPUT SCI] A hardware or software entity that requests shared services from a server. { 'klī-ənt }
- client-based application** [COMPUT SCI] An application that runs on a work station or personal computer in a network and is not available to others in the network. { 'klī-ənt ,bāst ,ap-lə ;kā-shən }
- client-server system** [COMPUT SCI] A computing system composed of two logical parts: a server, which provides information or services, and a client, which requests them. On a network, for example, users can access server resources from their personal computers using client software. { |klī-ənt 'sər-vər ,sis-təm }
- clip art** [COMPUT SCI] A collection of graphic images that are stored on a computer disk for use in desktop publishing, word processing, and presentation graphics programs. { 'klip ,ärt }
- clipboard** [COMPUT SCI] An area in memory or a file where cut or copied material is held temporarily before being inserted elsewhere in the same document or in another document. { 'klip ,bórd }
- clip lead** [ELECTR] A short piece of flexible wire with an alligator clip or similar temporary connector at one or both ends. { 'klip ,lēd }
- clipper** See limiter. { 'klip-ər }
- Clipper Chip** [COMPUT SCI] A chip proposed by the United States government to be used in all devices that might use encryption, such as computers and communications devices, for which the government would have at least some access or control over the decryption key for purposes of surveillance. { 'klip-ər ,chip }
- clipper diode** [ELECTR] A bidirectional breakdown diode that clips signal voltage peaks of either polarity when they exceed a predetermined amplitude. { 'klip-ər ,dī,ōd }
- clipper-limiter** [ELECTR] A device whose output is a function of the instantaneous input amplitude for a range of values lying between two predetermined limits but is approximately constant, at another level, for input values above the range. { |klip-ər ;līm-əd-ər }
- clipping** [COMMUN] The perceptible mutilation of signals or speech syllables during transmission, often due to limiting. [COMPUT SCI] See scissoring. [ELECTR] See limiting. { 'klip-ŋ }
- clipping circuit** See limiter. { 'klip-ŋ ,sər-kət }
- clipping level** [ELECTR] The level at which a clipping circuit is adjusted; for example, the magnitude of the clipped wave shape. { 'klip-ŋ ,lev-əl }
- CLIST** [COMPUT SCI] A file containing a series of commands that are processed in the order given when the file is entered. Acronym for command list. { 'sē ,list }
- clobber** [COMPUT SCI] To write new data and thereby erase good data in a file, or to otherwise
- clock** [ELECTR] A source of accurately timed pulses, used for synchronization in a digital computer or as a time base in a transmission system. { kläk }
- clock control system** [CONT SYS] A system in which a timing device is used to generate the control function. Also known as time-controlled system. { 'kläk kən'trōl ,sis-təm }
- clock-doubled** [COMPUT SCI] Describing a microprocessor that operates at twice the clock speed of the bus or motherboard to which it is attached. { 'kläk ;dəb-əld }



sci] A computing  
parts, a server,  
services, and a  
network, for  
resources from  
client software.

tion of graphic  
computer disk for  
processing, and  
{'klip, ärt }  
In memory or  
material is held  
elsewhere in  
the document.

lexible wire with  
rary connector  
l }

p proposed by  
to be used in  
ryption, such  
ons devices, for  
e at least some  
ryption key for  
or, chip }  
tional break-  
ltage peaks of  
predetermined

whose output is  
put amplitude  
two predeter-  
ly constant, at  
ove the range.

emutilation of  
transmission,  
] See scissor-  
p-ij }

-ij, sər-kət }  
at which a  
example, the  
pe. { 'klip-ij }

ng a series of  
he order given  
for command

ew data and  
r to otherwise  
rately timed  
in a digital  
transmission

A system in  
generate the  
ne-controlled

bing a micro-  
e clock speed  
it is attached.

**clocked flip-flop** [ELECTR] A flip-flop circuit that is set and reset at specific times by adding clock pulses to the input so that the circuit is triggered only if both trigger and clock pulses are present simultaneously. { 'kläkt 'flip, fläp }

**clocked logic** [ELECTR] A logic circuit in which the switching action is controlled by repetitive pulses from a clock. { 'kläkt 'laj-ik }

**clock frequency** [ELECTR] The master frequency of the periodic pulses that schedule the operation of a digital computer. Also known as clock rate; clock speed. { 'kläk, frë-kwan-së }

**clock motor** See timing motor. { 'kläk, möd-ör }

**clock oscillator** [ELECTR] An oscillator that controls an electronic clock. { 'kläk 'äs-a, 'läd-ör }

**clock pulses** [COMPUT SCI] Electronic pulses which are emitted periodically, usually by a crystal device, to synchronize the operation of circuits in a computer. Also known as clock signals. { 'kläk, pəl-səz }

**clock rate** See clock frequency. { 'kläk, rät }

**clock signals** See clock pulses. { 'kläk, sig-nəlz }

**clock speed** See clock frequency. { 'kläk, späd }

**clock time** See internal cycle time. { 'kläk, tīm }

**clock track** [COMPUT SCI] A track on a magnetic recording medium that generates clock pulses for the synchronization of read and write operations. { 'kläk, trak }

**clock-tripled** [COMPUT SCI] Describing a micro-processor that operates at three times the clock speed of the bus or motherboard to which it is attached. { 'kläk, trip-äld }

**clone** [COMPUT SCI] A hardware or software product that closely resembles another product created by a different manufacturer or developer, in operation, appearance, or both. { klön }

**close** [COMPUT SCI] To make a file unavailable to a computer program which previously had access to it. { klös }

**close coupling** [ELEC] 1. The coupling obtained when the primary and secondary windings of a radio-frequency or intermediate-frequency transformer are close together. 2. A degree of coupling that is greater than critical coupling. Also known as tight coupling. { 'klös 'kəp-lij }

**closed architecture** [COMPUT SCI] A computer architecture whose detailed, technical specifications are available only to those authorized by the manufacturer. { 'klözd 'ärk-ə, tek-čər }

**closed-box system** [ELECTR] A loudspeaker system in which the woofer is mounted in a sealed box. { 'klözd 'bäks, sis-təm }

**closed-bus system** [COMPUT SCI] A computer that lacks receptacles for expansion boards and is difficult to upgrade. { 'klöd 'bəs, sis-təm }

**closed-caption television** [COMMUN] A method of captioning or subtitling television programs by coding captions as a vertical-interval data signal in an analog television system or in the transport of a digital television system that is decoded at the receiver and superimposed on the normal television picture. { 'klözd 'kap-šən 'tel-ə, vızh-ən }

**closed circuit** [COMMUN] Program source that is not broadcast for general consumption but is fed to remote monitoring units. { 'klözd 'sər-kət }

**closed-circuit communications system** [COMMUN] A communications systems which is entirely self-contained, and does not exchange intelligence with other facilities and systems. { 'klözd 'sər-kət kə, myü-nə 'kə-šənz, sis-təm }

**closed-circuit signaling** [COMMUN] Signaling in which current flows in the idle condition, and a signal is initiated by increasing or decreasing the current. { 'klözd 'sər-kət 'sig-nə-lij }

**closed-circuit telegraph system** [COMMUN] Telegraph system in which, when no station is transmitting, the circuit is closed and current flows through the circuit. { 'klözd 'sər-kət 'tel-ə, graf, sis-təm }

**closed-circuit televsion** [COMMUN] Any application of television that does not involve broadcasting for public viewing; the programs can be seen only on specified receivers connected to the television camera by circuits, which include microwave relays and coaxial cables. Abbreviated CCTV. { 'klözd 'sər-kət 'tel-ə, vızh-ən }

**closed-coil armature** [ELEC] The configuration of an armature in which the connection of all the coils forms a closed circuit. { 'klözd 'kəil 'är-mə-čər }

**closed-cycle fuel cell** [ELEC] A fuel cell in which the reactants are regenerated by an auxiliary process, such as electrolysis. { 'klözd 'st-kəl 'fyü, sel }

**closed file** [COMPUT SCI] A file that cannot be accessed for reading or writing. { 'klözd 'fil }

**closed loop** [COMPUT SCI] A loop whose execution continues indefinitely in the absence of any external intervention. [CONT SYS] A family of automatic control units linked together with a process to form an endless chain; the effects of control action are constantly measured so that if the controlled quantity departs from the norm, the control units act to bring it back. { 'klözd 'löp }

**closed-loop control system** See feedback control system. { 'klözd 'löp kan'tröl, sis-təm }

**closed-loop telemetry system** [ENG] 1. A telemetry system which is also used as the display portion of a remote-control system. 2. A system used to check out test vehicle or telemetry performance without radiation of radio-frequency energy. { 'klözd 'löp tə'lem-ə-trë, sis-təm }

**closed-loop voltage gain** [ELECTR] The voltage gain of an amplifier with feedback. { 'klözd 'löp 'völ-tij, gän }

**closed shop** [COMPUT SCI] A data-processing center so organized that only professional programmers and operators have access to the center to meet the needs of users. { 'klözd 'šhəp }

**closed subroutine** [COMPUT SCI] A subroutine that can be stored outside the main routine and can be connected to it by linkages at one or more locations. { 'klözd 'səb-rü,tën }

## closefile

- closefile** [COMPUT SCI] A procedure call in time sharing which enables an ALGOL program to close a file no longer required. { 'klōz,fil }
- close-out file** [COMPUT SCI] A file created at the end of a processing cycle, usually encompassing a specified period of time. { 'klōz ,aüt ,fil }
- close routine** [COMPUT SCI] A computer program that changes the state of a file from open to closed. { 'klōz rü'tēn }
- close-talking microphone** [ENG ACOUS] A microphone designed for use close to the mouth, so noise from more distant points is suppressed. Also known as noise-canceling microphone. { 'klōs ,tōk-ij 'mī-kra,fōn }
- cloud pulse** [ELECTR] The output resulting from space charge effects produced by turning the electron beam on or off in a charge-storage tube. { 'klaüd ,pōls }
- cloverleaf antenna** [ELECTROMAG] Antenna having radiating units shaped like a four-leaf clover. { 'klō-vər,lēf an 'ten-ə }
- cluster** [COMPUT SCI] 1. In a clustered file, one of the classes into which records with similar sets of content identifiers are grouped. 2. A grouping of hardware devices in a distributed processing system. 3. A group of disk sectors that is treated as a single entity by the operating system. { 'klas-tər }
- cluster controller** [COMPUT SCI] A control unit to which several peripheral devices are assigned. { 'klas-tər kən,trōl-ər }
- clustered file** [COMPUT SCI] A collection of records organized so that items which exhibit similar sets of content identifiers are automatically grouped into common classes. { 'klas-tərd 'fil }
- clustering algorithm** [COMPUT SCI] A computer program that attempts to detect and locate the presence of groups of vectors, in a high-dimensional multivariate space, that share some property of similarity. { 'klas-tə-rig 'al-gə ,riθ-əm }
- clutter** [ELECTROMAG] Unwanted echoes on a radar screen, such as those caused by the ground, sea, rain, stationary objects, chaff, enemy jamming transmissions, and grass. Also known as background returns; radar clutter. { 'kləd-ər }
- clutter gating** [ELECTR] A technique which provides switching between moving-target-indicator and normal videos; this results in normal video being displayed in regions with no clutter and moving-target-indicator video being switched in only for the clutter areas. { 'kləd-ər ,gəd-ij }
- clutter suppression** [ELECTR] Technique of reducing, by various means integral to the radar system, the effects of echoes from scatterers such as rain and surface features among the received signals. { 'kləd-ər sə,presh-ən }
- CMI** See computer-managed instruction.
- CML** See current-mode logic.
- CMOS device** [ELECTR] A device formed by the combination of a PMOS (p-type-channel metal oxide semiconductor device) with an NMOS (n-type-channel metal oxide semiconductor device). Derived from complementary metal oxide semiconductor device. { 'se,mōs di'vīs }
- CMRR** See common-mode rejection ratio.
- CNC** See computer numerical control.
- C network** [ELECTR] Network composed of three impedance branches in series, the free ends being connected to one pair of terminals, and the junction points being connected to another pair of terminals. { 'sē ,net,wərk }
- coast** [ENG] A memory feature on a radar which, when activated, causes the range and angle systems to continue to move in the same direction and at the same speed as that required to track an original target. { kōst }
- coastal refraction** [ELECTROMAG] An apparent change in the direction of travel of a radio wave when it crosses a shoreline obliquely. Also known as land effect. { 'kōs-təl ri'frak-shən }
- coated cathode** [ELECTR] A cathode that has been coated with compounds to increase electron emission. { 'kōd-əd 'kəθ,əd }
- coated filament** [ELECTR] A vacuum-tube filament coated with metal oxides to provide increased electron emission. { 'kōd-əd 'fil-ə-mənt }
- coax** See coaxial cable. { 'kō,əks }
- coaxial antenna** [ELECTROMAG] An antenna consisting of a quarter-wave extension of the inner conductor of a coaxial line and a radiating sleeve that is in effect formed by folding back the outer conductor of the coaxial line for a length of approximately a quarter wavelength. { 'kō'əks-sē-əl an'ten-ə }
- coaxial attenuator** [ELECTROMAG] An attenuator that has a coaxial construction and terminations suitable for use with coaxial cable. { 'kō'əks-sē-əl ə'ten-yə,wād-ər }
- coaxial bolometer** [ELECTR] A bolometer in which the desired square-law detection characteristic is provided by a fine Wollaston wire element that has been thoroughly cleaned before being axially located and soldered in position in its cylinder. { 'kō'əks-sē-əl bə'lām-əd-ər }
- coaxial cable** [ELECTROMAG] A transmission line in which one conductor is centered inside and insulated from an outer metal tube that serves as the second conductor. Also known as coax; coaxial line; coaxial transmission line; concentric cable; concentric line; concentric transmission line. { 'kō'əks-sē-əl 'kə-bəl }
- coaxial capacitor** See cylindrical capacitor. { 'kō'əks-sē-əl kə'pas-əd-ər }
- coaxial cavity** [ELECTROMAG] A cylindrical resonating cavity having a central conductor in contact with its pistons or other reflecting devices. { 'kō'əks-sē-əl 'kav-əd-ē }
- coaxial cavity magnetron** [ELECTR] A magnetron which achieves mode separation, high efficiency, stability, and ease of mechanical tuning by coupling a coaxial high Q cavity to a normal set of quarter-wavelength vane cavities. { 'kō'əks-sē-əl ,kav-əd-ē 'mag-nə,trä'n }
- coaxial connector** [ELECTROMAG] An electric connector between a coaxial cable and an equipment circuit, so constructed as to maintain the conductor configuration, through the separable connection, and the characteristic impedance of the coaxial cable. { 'kō'əks-sē-əl kə'nek-tər }

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**coaxial-cylinder magnetron** [ELECTR] A magne-  
tron in which the cathode and anode consist of  
coaxial cylinders. { kō'ak-sē-əl, sil-ən-dar 'mag-  
nə, trān }

**coaxial diode** [ELECTR] A diode having the same  
outer diameter and terminations as a coaxial  
cable, or otherwise designed to be inserted in  
a coaxial cable. { kō'ak-sē-əl 'dī, ōd }

**coaxial filter** [ELECTROMAG] A section of coaxial  
line having reentrant elements that provide the  
inductance and capacitance of a filter section.  
{ kō'ak-sē-əl 'fīl-tər }

**coaxial hybrid** [ELECTROMAG] A hybrid junction  
of coaxial transmission lines. { kō'ak-sē-əl 'hī  
'brad }

**coaxial isolator** [ELECTROMAG] An isolator used  
in a coaxial cable to provide a higher loss for  
energy flow in one direction than in the opposite  
direction; all types use a permanent magnetic  
field in combination with ferrite and dielectric  
materials. { kō'ak-sē-əl 'ī-sə, lād-ər }

**coaxial line** See coaxial cable. { kō'ak-sē-əl 'līn }

**coaxial-line resonator** [ELECTROMAG] A reso-  
nator consisting of a length of coaxial line short-  
circuited at one or both ends. { kō'ak-sē-əl, līn  
'rez-ən, ād-ər }

**coaxial speaker** [ENG ACOUS] A loudspeaker sys-  
tem comprising two, or less commonly three,  
speaker units mounted on substantially the  
same axis in an integrated mechanical assembly,  
with an acoustic-radiation-controlling structure.  
{ kō'ak-sē-əl 'spēk-ər }

**coaxial stub** [ELECTROMAG] A length of nondis-  
sipative cylindrical waveguide or coaxial cable  
branched from the side of a waveguide to pro-  
duce some desired change in its characteristics.  
{ kō'ak-sē-əl 'stob }

**coaxial switch** [ELEC] A switch that changes  
connections between coaxial cables going  
to antennas, transmitters, receivers, or other  
high-frequency devices without introducing  
impedance mismatch. { kō'ak-sē-əl 'swīch }

**coaxial transistor** [ELECTR] A point-contact tran-  
sistor in which the emitter and collector are point  
electrodes making pressure contact at the centers  
of opposite sides of a thin disk of semicon-  
ductor material serving as base. { kō'ak-sē-əl  
tran'zīs-tər }

**coaxial transmission line** See coaxial cable.  
{ kō'ak-sē-əl tranz'mīsh-ən, līn }

**coaxial wavemeter** [ENG] A device for measuring  
frequencies above about 100 megahertz, consist-  
ing of a rigid metal cylinder that has an inner  
conductor along its central axis, and a sliding disk  
that shorts the inner conductor and the cylinder.  
{ kō'ak-sē-əl 'wāv, mēd-ər }

**COBOL** [COMPUT SCI] A business data-processing  
language that can be given to a computer as  
a series of English statements describing a  
complete business operation. Derived from  
common business-oriented language. { 'kō  
'bōl }

**cochannel cells** [COMMUN] Two cells in a cellular  
mobile radio system that use the same frequency.  
{ 'kō, chan-əl 'selz }

**cochannel interference** [COMMUN] Interference  
caused on one communication channel by a  
transmitter operating in the same channel.  
{ 'kō, chan-əl, in-tər'fir-əns }

**cochannel interference reduction factor** [COM-  
MUN] The ratio of the minimum separation be-  
tween two cochannel cells without interference to  
the radius of a cell. { 'kō, chan-əl, in-tər, fir-əns  
rī'dōk-shān, 'fak-tər }

**codan** [ELECTR] A device that silences a receiver  
except when a modulated carrier signal is being  
received. { 'kō, dān }

**Coddington shape factor** See shape factor.  
{ 'kād-ij-tən 'shāp, 'fak-tər }

**code** [COMMUN] 1. A system of symbols and rules  
for expressing information, such as the Morse  
code, 2. Electronic Industries Association color  
code, and the binary and other machine lan-  
guages used in digital computers. { kōd }

**code book** [COMMUN] A book containing a large  
number of plaintext words, phrases, and sen-  
tences and their codetext equivalents. { 'kōd  
'būk }

**codex** [ELECTR] A device that converts analog  
signals to digital form for transmission and con-  
verts signals traveling in the opposite direction  
from digital to analog form. Derived from coder-  
decoder. { 'kō, dek }

**code-check** [COMPUT SCI] To remove mistakes  
from a coded routine or program. { 'kōd, 'chek }

**code checking time** [COMPUT SCI] Time spent  
checking out a problem on the computer,  
making sure that the problem is set up correctly  
and that the code is correct. { 'kōd, 'chek-ij  
'tīm }

**code converter** [COMPUT SCI] A converter that  
changes coded information to a different code  
system. { 'kōd kən'vərd-ər }

**coded character set** [COMPUT SCI] A set of char-  
acters together with the code assigned to each  
character for computer use. { 'kōd-əd 'kar-ik-tər  
'set }

**coded decimal** See decimal-coded digit. { 'kōd-əd  
'des-məl }

**coded interrogator** [COMMUN] An interrogator  
whose output signal forms the code required to  
trigger a specific radio or radar beacon; part of  
an address-selective system. { 'kōd-əd in'ter-ə  
'gād-ər }

**code-division multiple access** [COMMUN] The  
transmission of messages from a large number of  
transmitters over a single channel by assigning  
each transmitter a pseudorandom noise code  
(typically more than 2000 symbols long for  
each bit of information) so that the codes are  
mathematically independent of each other. Ab-  
breviated CDMA. { 'kōd də'vīzh-ən 'məl-tə-pəl  
'ak, ses }

**code-division multiplex** [COMMUN] Multiplex in  
which two or more communication links occupy  
the entire transmission channel simultaneously,  
with code signal structures designed so a given  
receiver responds only to its own signals and  
treats the other signals as noise. Abbreviated  
CDM. { 'kōd də'vīzh-ən 'mālt-i, pleks }

## coded passive reflector antenna

**coded passive reflector antenna** [ELECTROMAG] An object intended to reflect Hertzian waves and having variable reflecting properties according to a predetermined code for the purpose of producing an indication on a radar receiver. { 'kɔd-əd 'pas-ɪv rɪ'flek-tər an-ten-ə }

**coded program** [COMPUT SCI] A program expressed in the required code for a computer. { 'kɔd-əd 'prɔ-grəm }

**coded stop** [COMPUT SCI] A stop instruction built into a computer routine. { 'kɔd-əd 'stɒp }

**code element** [COMMUN] One of the separate elements or events constituting a coded message, such as the presence or absence of a pulse, dot, dash, or space. { 'kɔd ,el-ə-mənt }

**code error** [COMPUT SCI] A surplus or lack of a bit or bits in a machine instruction. { 'kɔd ,er-ər }

**code-excited linear predictive coder** [COMMUN] A speech coder that uses both short-term and long-term predictors, vector quantization techniques, and an analysis-by-synthesis approach to search for the best combination of coder parameters. Abbreviated CELP coder. { 'kɔd ɪksɪtəd lɪn-ɛ-ər prə'dɪk-tɪv 'kɔd-ər }

**code extension** [COMPUT SCI] A method of increasing the number of characters that can be represented by a code by combining characters into groups. { 'kɔd ɪk-sten-ʃən }

**code group** [COMMUN] A combination of letters or numerals or both, assigned to represent one or more words of plain text in a coded message. { 'kɔd ,grʊp }

**code line** [COMPUT SCI] In character recognition, the area reserved for the inscription of the printed or handwritten characters to be recognized. { 'kɔd ,lɪn }

**code practice oscillator** [ELECTR] An oscillator used with a key and either headphones or a loudspeaker to practice sending and receiving Morse code. { 'kɔd ɪ'prak-təs 'ɔs-ə,ləd-ər }

**coder** [COMMUN] A device that generates a code by producing pulses having varying lengths or spacings, as required for radio beacons and interrogators. Also known as modulator; pulse coder; pulse-duration coder. [COMPUT SCI] A person who translates a sequence of computer instructions into codes acceptable to the machine. { 'kɔd-ər }

**coder-decoder** See codec. { 'kɔd-ər dɛkɔd-ər }

**code reader** [COMPUT SCI] A scanning device used for automated identification of a two-dimensional pattern, one part after the other, and generation of either analog or digital signals that correspond to the pattern. Also known as code scanner. { 'kɔd ,rɛd-ər }

**code ringing** [COMMUN] In telephone switching, party-line ringing wherein the number or duration of rings indicates which station is being called. { 'kɔd ,rɪŋ-ɪŋ }

**code scanner** See code reader. { 'kɔd ,skan-ər }

**code sensitivity** [COMPUT SCI] Property of hardware or software that can handle only data presented in a particular code. { 'kɔd ,sen-sə-tɪv-əd-ē }

**code signal** [COMMUN] A sequence of discrete conditions or events corresponding to a coded message. { 'kɔd ,sɪg-nəl }

**codetext** [COMMUN] A message which has been transformed by a code into a form which can be read only by those privy to the secrets of the code. { 'kɔd ,tekst }

**code translation** [COMMUN] Conversion of a directory code or number into a predetermined code for controlling the selection of an outgoing trunk or line. { 'kɔd tranz,lā-shən }

**code transparency** [COMPUT SCI] Property of hardware or software that can handle data regardless of what form it is in. { 'kɔd tranz ,par-ən-sē }

**coding** [COMPUT SCI] 1. The process of converting a program design into an accurate, detailed representation of that program in some suitable language. 2. A list, in computer code, of the successive operations required to carry out a given routine or solve a given problem. { 'kɔd-ɪŋ }

**coding disk** [COMMUN] Disk with small projections for operating contacts to give a certain predetermined code to a transmission. { 'kɔd-ɪŋ ,disk }

**coding form** See coding sheet. { 'kɔd-ɪŋ ,fɔrm }

**coding line** See instruction word. { 'kɔd-ɪŋ ,lɪn }

**coding sheet** [COMPUT SCI] A sheet of paper printed with a form on which one can conveniently write a coded program. Also known as coding form. { 'kɔd-ɪŋ ,ʃi:t }

**codistor** [ELECTR] A multijunction semiconductor device which provides noise rejection and voltage regulation functions. { kɔ'dɪs-tər }

**coefficient of capacitance** [ELEC] One of the coefficients which appears in the linear equations giving the charges on a set of conductors in terms of the potentials of the conductors; a coefficient is equal to the ratio of the charge on a given conductor to the potential of the same conductor when the potentials of all the other conductors are 0. { 'kɔ-ə'fɪʃ-ənt əv kə'pas-ə-təns }

**coefficient of induction** [ELEC] One of the coefficients which appears in the linear equations giving the charges on a set of conductors in terms of the potentials of the conductors; a coefficient is equal to the ratio of the charge on a given conductor to the potential on another conductor, when the potentials of all the other conductors equal 0. { 'kɔ-ə'fɪʃ-ənt əv ɪn'dʌk-shən }

**coefficient of potential** [ELEC] One of the coefficients which appears in the linear equations giving the potentials of a set of conductors in terms of the charges on the conductors. { 'kɔ-ə'fɪʃ-ənt əv pə'ten-ʃəl }

**coercion** [COMPUT SCI] A method employed by many programming languages to automatically convert one type of data to another. { kɔ'ər-ʃən }

**cog** [ELEC] A fluctuation in the torque delivered by a motor when it runs at low speed, due to electromechanical effects. Also known as torque ripple. { kəg }

**COGO** [COMPUT SCI] A higher-level computer language oriented toward civil engineering,

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enabling one to write a program in a technical  
vocabulary familiar to engineers and feed it to  
the computer, several versions have been im-  
plemented. Derived from coordinated geometry.  
{ 'kō,gō }

**cohered video** [ELECTR] The video detector out-  
put signal in a coherent moving-target indicator  
radar system. { kō'hird 'vid-ē-ō }

**coherent** [ELECTR] Referring to radar signals and  
signal processing and related equipment wherein  
attention is given to both the amplitude and  
the phase of the signal; many valuable pro-  
cesses in radar operation are coherent in nature.  
{ kō'hir-ənt }

**coherent carrier system** [NAV] Transponder  
system in which the interrogating carrier is  
retransmitted at a definite multiple frequency  
for comparison. { kō'hir-ənt 'kar-ē-ər ,sis-  
təm }

**coherent detector** [ELECTR] A detector used in  
coherent radar giving an output-signal amplitude  
that depends on the phase of the echo signal  
(rather than only its amplitude) relative to  
the phase of that which was transmitted, as  
required for sensing the radial velocity of targets.  
Also known as phase detector. { kō'hir-ənt  
di'tek-tār }

**coherent echo** [ELECTR] A radar echo whose  
phase and amplitude at a given range remain  
relatively constant. { kō'hir-ənt 'ek-ō }

**coherent integration** [ELECTR] A radar signal pro-  
cessing technique in which the phase relation-  
ships among successive pulses being echoed  
from a target are interpreted, usually to estimate  
or to separate signals based on the appar-  
ent Doppler shift of the signals. { kō'hir-ənt  
int-ə'grā-shən }

**coherent interrupted waves** [COMMUN] Inter-  
rupted continuous waves occurring in wave trains  
in which the phase of the waves is maintained  
through successive wave trains. { kō'hir-ənt  
in-tə'rəp-təd 'wāvz }

**coherent light communications** [COMMUN]  
Communications using the optical band as a  
transmission medium by modulating a laser in  
amplitude or pulse frequency. { kō'hir-ənt 'lit  
ka,mjū-nə'kā-shənz }

**coherent moving-target indicator** [ENG] A radar  
system in which the Doppler frequency of the  
target echo is compared to a local reference  
frequency generated by a coherent oscillator.  
{ kō'hir-ənt ,mūv-ig ,tār-gət ,in-də,kād-ər }

**coherent noise** [ENG] Noise that affects all tracks  
across a magnetic tape equally and simultane-  
ously. { kō'hir-ənt 'nōiz }

**coherent oscillator** [ELECTR] An oscillator locked  
in phase to the transmitted signal as used in  
coherent radar to provide a reference by which  
changes in the phase of successively received  
pulses may be recognized. Abbreviated coho.  
{ kō'hir-ənt 'ās-ə,lād-ər }

**coherent processing interval** [ELECTR] That pe-  
riod of time over which radar return signals are  
coherently integrated, permitting a resolution  
in Doppler shift being sensed as great as the

reciprocal of the interval. { kō'hir-ənt 'prās-əs-ig  
'in-tər-vəl }

**coherent-pulse radar** [ELECTR] A radar in which  
the radio-frequency oscillations of recurrent  
pulses bear a constant phase relation to those  
of a continuous oscillation. { kō'hir-ənt ,pəls  
'rā,dār }

**coherent pulses** [ELECTR] Characterizing pulses  
in which the phase of the radio-frequency  
waves is maintained through successive pulses.  
{ kō'hir-ənt 'pəl-səz }

**coherent radar** [ELECTR] A radar capable of com-  
paring the phase of received signals with the  
phase of the transmitted signal, generally with  
the object of sensing pulse-to-pulse phase  
changes, indicative of radial motion, and hence  
the Doppler shift, of the target. { kō'hir-ənt 'rā  
,dār }

**coherent reference** [ELECTR] A reference signal,  
usually of stable frequency, to which other  
signals are phase-locked to establish coherence  
throughout a system. { kō'hir-ənt 'ref-rəns }

**coherent side-lobe canceler** [ELECTR] A radar  
feature in which interfering signals in the side  
lobes of the radar antenna are cancelled by  
adaptively adjusting the phase and amplitude  
of signals received in a number of auxiliary  
antennas and subtracting those from the signal  
in the main antenna. { kō'hir-ənt 'sid ,lōb  
'kan-səl-ər }

**coherent signal** [ELECTR] In coherent radar, a  
signal having a known phase, often constant, as  
that produced by the coherent oscillator to be  
mixed in the coherent detector with the echo  
signal to detect pulse-to-pulse phase changes  
indicative of target radial motion. { kō'hir-ənt  
'sig-nəl }

**coherent system** [NAV] A navigation system in  
which the signal output is obtained by demod-  
ulating the received signal after mixing with a  
local signal having a fixed phase relation to that  
of the transmitted signal, to permit use of the  
information carrier by the phase of the received  
signal. { kō'hir-ənt 'sis-təm }

**coherent transponder** [ELECTR] A transponder in  
which a fixed relation between frequency and  
phase of input and output signals is maintained.  
{ kō'hir-ənt tranz'pänd-ər }

**coherent video** [ELECTR] The video signal pro-  
duced in a coherent radar by combining in a  
coherent detector a radar echo signal with the  
output of the continuous wave coherent oscil-  
lator. Also called bipolar video. { kō'hir-ənt  
'vid-ē-ō }

**coherer** [ELEC] A cell containing a granular con-  
ductor between two electrodes; the cell becomes  
highly conducting when it is subjected to an elec-  
tric field, and conduction can then be stopped  
only by jarring the granules. { kō'hir-ər }

**coho** See coherent oscillator. { 'kō,hō }

**coil** [CONT SYS] Any discrete and logical result  
that can be transmitted as output by a pro-  
grammable controller. [ELECTROMAG] A num-  
ber of turns of wire used to introduce inductance  
into an electric circuit, to produce magnetic flux,

## coil antenna

or to react mechanically to a changing magnetic flux; in high-frequency circuits a coil may be only a fraction of a turn. Also known as electric coil; inductance coil; inductor. { 'kōil }

**coil antenna** [ELECTROMAG] An antenna that consists of one or more complete turns of wire. { 'kōil an'ten-ə }

**coil loading** [COMMUN] Loading in which inductors, commonly called loading coils, are inserted in a line at intervals. { 'kōil ,lōd-īŋ }

**coil neutralization** See inductive neutralization. { 'kōil nū-trə-lə'zā-shən }

**coil serving** See serving. { 'kōil ,sərv-īŋ }

**coincidence amplifier** [ELECTR] An electronic circuit that amplifies only that portion of a signal present when an enabling or controlling signal is simultaneously applied. { kō'in-sə-dəns ,am-plə,fī-ər }

**coincidence circuit** [ELECTR] A circuit that produces a specified output pulse only when a specified number or combination of two or more input terminals receives pulses within an assigned time interval. Also known as coincidence counter; coincidence gate. { kō'in-sə-dəns ,sər-kət }

**coincidence counter** See coincidence circuit. { kō'in-sə-dəns ,kaunt-ər }

**coincidence gate** See coincidence circuit. { kō'in-sə-dəns ,gāt }

**coincident-current selection** [ELECTR] The selection of a particular magnetic cell, for reading or writing in computer storage, by simultaneously applying two or more currents. { kō'in-sə-dənt 'kər-ənt si'lek-shən }

**cold** [ELEC] Pertaining to electrical circuits that are disconnected from voltage supplies and at ground potential; opposed to hot, pertaining to carrying an electrical charge. { kōld }

**cold boot** [COMPUT SCI] To turn the power on and boot a computer. { 'kōld 'būt }

**cold cathode** [ELECTR] A cathode whose operation does not depend on its temperature being above the ambient temperature. { 'kōld 'kath ,ōd }

**cold-cathode counter tube** [ELECTR] A counter tube having one anode and three sets of 10 cathodes; two sets of cathodes serve as guides that direct the flow discharge to each of the 10 output cathodes in correct sequence in response to driving pulses. { 'kōld 'kath,ōd 'kaunt-ər ,tüb }

**cold-cathode discharge** See glow discharge. { 'kōld 'kath,ōd 'dis,chārij }

**cold-cathode ionization gage** See Philips ionization gage. { 'kōld 'kath,ōd ,ī-ən-ə'zā-shən ,gāj }

**cold-cathode rectifier** [ELECTR] A cold-cathode gas tube in which the electrodes differ greatly in size so electron flow is much greater in one direction than in the other. Also known as gas-filled rectifier. { 'kōld 'kath,ōd 'rek-tə,fī-ər }

**cold-cathode tube** [ELECTR] An electron tube containing a cold cathode, such as a cold-

cathode rectifier, mercury-pool rectifier, neon tube, phototube, or voltage regulator. { 'kōld 'kath,ōd ,tüb }

**cold emission** See field emission. { 'kōld i'mi-shən }

**cold junction** [ELECTR] The reference junction of thermocouple wires leading to the measuring instrument; normally at room temperature. { 'kōld 'jəŋk-shən }

**cold link** [COMPUT SCI] A linking of information in two documents in which updating the link requires recopying the information from the source document to the target document. { 'kōld 'līŋk }

**cold start** [COMPUT SCI] To start running a computer program from the very beginning, without being able to continue the processing that was occurring previously when the system was interrupted. { 'kōld 'stārt }

**Cole-Cole plot** [ELEC] For a substance displaying orientation polarization, a graph of the imaginary part versus the real part of the complex relative permittivity that is a circular arc, with its center below the abscissa. { 'kōl 'kōl ,plät }

**Cole-Davidson plot** [ELEC] For a substance displaying orientation polarization, a graph of the real part versus the imaginary part of the complex relative permittivity that is a skewed arc which approximates a straight line at the high-frequency end and a circular arc at the low-frequency end. { 'kōl 'dā-vəd-sən ,plät }

**collate** [COMPUT SCI] To combine two or more similarly ordered sets of values into one set that may or may not have the same order as the original sets. { 'kə,lät }

**collating sequence** [COMPUT SCI] The ordering of a set of items such that sets in that assigned order can be collated. { 'kə,lād-īŋ ,sē-kwəns }

**collector** [ELECTR] 1. A semiconductive region through which a primary flow of charge carriers leaves the base of a transistor; the electrode or terminal connected to this region is also called the collector. 2. An electrode that collects electrons or ions which have completed their functions within an electron tube; a collector receives electrons after they have done useful work, whereas an anode receives electrons whose useful work is to be done outside the tube. Also known as electron collector. { kə'lek-tər }

**collector capacitance** [ELECTR] The depletion-layer capacitance associated with the collector junction of a transistor. { kə'lek-tər kə'pas-əd-əns }

**collector current** [ELECTR] The direct current that passes through the collector of a transistor. { kə'lek-tər ,kər-ənt }

**collector cutoff** [ELECTR] The reverse saturation current of the collector-base junction. { kə'lek-tər 'kəd,ōf }

**collector junction** [ELECTR] A semiconductor junction located between the base and collector electrodes of a transistor. { kə'lek-tər ,jəŋk-shən }

**collector modulation** [ELECTR] Amplitude modulation in which the modulator varies the

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or. { kō'lek-tōr

mplitude mod-  
or varies the

collector voltage of a transistor. { kō'lek-tōr  
(mā'ō'lā-shān )

**collector plate** [ELEC] One of several metal in-  
serts that are sometimes embedded in the lining  
of an electrolyte cell to make the resistance  
between the cell lining and the current leads as  
small as possible. { kō'lek-tōr ,plāt }

**collector resistance** [ELECTR] The back resis-  
tance of the collector-base diode of a transistor.  
{ kō'lek-tōr r'zis-tāns }

**collector ring** See slip ring. { kō'lek-tōr ,rīŋ }

**collector voltage** [ELECTR] The direct-current  
voltage, obtained from a power supply, that is  
applied between the base and collector of a  
transistor. { kō'lek-tōr ,vōl-tij }

**colliding-beam source** [ELECTR] A device for gen-  
erating beams of polarized negative hydrogen  
or deuterium ions, in which polarized negative  
hydrogen or deuterium atoms are converted to  
negative ions through charge exchange during  
collisions with cesium atoms. { kō'līd-īŋ ,bēm  
,sōrs }

**collimation error** [ENG] 1. Angular error in mag-  
nitude and direction between two nominally  
parallel lines of sight. 2. Specifically, the angle  
by which the line of sight of a radar differs from  
what it should be. { kō'līm-ō'mā-shān ,er-ōr }

**collimation tower** [ENG] Tower on which a visual  
and a radio target are mounted to check the  
electrical axis of an antenna. { kō'līm-ō'mā-shān  
,tāw-ōr }

**collinear array** See linear array. { kō'lin-ē-ō'rā }

**collinear heterodyning** [ELECTR] An optical pro-  
cessing system in which the correlation function  
is developed from an ultrasonic light modulator,  
the output signal is derived from a reference  
beam in such a way that the two beams are  
collinear until they enter the detection aperture;  
variations in optical path length then modulate  
the phase of both signal and reference beams  
simultaneously, and phase differences cancel  
out in the heterodyning process. { kō'lin-ē-ōr  
'hed-ō-rā ,dīn-īŋ }

**collision-avoidance radar** [ENG] Radar equip-  
ment utilized in a collision-avoidance system.  
{ kō'līzh-ōn ə'vōid-ōns ,rā ,dār }

**collision-avoidance system** [ENG] Electronic  
devices and equipment used by a pilot to  
perform the functions of conflict detection and  
avoidance. { kō'līzh-ōn ə'vōid-ōns ,sis-təm }

**collision detection** [COMPUT SCI] A procedure in  
which a computer network senses a situation  
where two computer devices attempt to access  
the network at the same time and blocks the mes-  
sages, requiring each device to resubmit its mes-  
sage at a randomly selected time. { kō'līzh-ōn  
dī ,tek-shān }

**color aberration** See chromatic aberration.  
{ 'kōl-ōr əb-ō'rā-shān }

**color balance** [ELECTR] Adjustment of the cir-  
cuits feeding the three electron guns of a  
television color picture tube to compensate for  
differences in light-emitting efficiencies of the  
three color phosphors on the screen of the tube.  
{ 'kōl-ōr ,bal-ōns }

**color-bar generator** [ELECTR] A signal generator  
that delivers to the input of a video system the  
signal needed to produce a color-bar test pattern  
on a device or system. { 'kōl-ōr ,bār 'jen-ō  
,rād-ōr }

**color-bar test pattern** [COMMUN] A test pattern  
of different colors of vertical bars, used to check  
the performance of a video system. { 'kōl-ōr ,bār  
'test ,pad-ōrn }

**color breakup** [COMMUN] A transient or dynamic  
distortion of the color in an analog color tele-  
vision picture that can originate in videotape  
equipment, a television camera, or a receiver.  
{ 'kōl-ōr ,brāk ,əp }

**color burst** [ELECTR] The portion of an analog  
composite color television signal consisting of  
a few cycles of a sine wave of chrominance sub-  
carrier frequency. Also known as burst; reference  
burst. { 'kōl-ōr ,bōrst }

**color carrier** See chrominance subcarrier.  
{ 'kōl-ōr ,kar-ē-ōr }

**color-carrier reference** See chrominance-carrier  
reference. { 'kōl-ōr ,kar-ē-ōr ,ref-rāns }

**color code** [ELEC] A system of colors used to  
indicate the electrical value of a component or  
to identify terminals and leads. { 'kōl-ōr ,kōd }

**color coder** See matrix. { 'kōl-ōr ,kōd-ōr }

**color contamination** [ELECTR] An error in the  
color rendition of an analog color television  
picture that results from incomplete separation  
of the paths that carry different color components  
of a picture. { 'kōl-ōr kən ,tam-ə'nā-shān }

**color control** See chroma control. { 'kōl-ōr kən  
'trōl }

**color decoder** See matrix. { 'kōl-ōr dē'kōd-ōr }

**color-difference signal** [ELECTR] A signal that is  
added to the monochrome signal in an analog  
color television receiver to obtain a signal repre-  
sentative of one of the three tristimulus values  
needed by the color picture tube. { 'kōl-ōr  
'dīf-rāns ,sig-nəl }

**color encoder** See matrix. { 'kōl-ōr en'kōd-ōr }

**color facsimile** [COMMUN] A facsimile system for  
transmission of color photographs, in which  
three separate facsimile transmissions are made  
from the original color print, using color-  
separation filters in the optical system of the  
facsimile transmitter. { 'kōl-ōr ,fak'sim-ə-lē }

**color fringing** [ELECTR] Spurious chromaticity at  
boundaries of objects in a television picture.  
{ 'kōl-ōr 'frīn-īŋ }

**color killer circuit** [ELECTR] The circuit in an  
analog color television receiver that biases  
chrominance amplifier tubes to cutoff during  
reception of monochrome programs. Also known  
as killer stage. { 'kōl-ōr ,kil-ōr ,sər-kāt }

**color kinescope** See color picture tube. { 'kōl-ōr  
'kīn-ə-skōp }

**color oscillator** See chroma oscillator. { 'kōl-ōr  
'ās-ə ,lād-ōr }

**color phase** [COMMUN] The difference in phase  
between components (I or Q) of a chrominance  
signal and the chrominance-carrier reference in  
an analog color television receiver. { 'kōl-ōr  
'fāz }

## color-phase alternation

- color-phase alternation** [COMMUN] The periodic changing of the color phase of one or more components of the chrominance subcarrier between two sets of assigned values after every field in an analog color television system. Abbreviated CPA. { 'kəl-ər, fāz əl-tər'nā-shən }
- color-phase detector** [ELECTR] The analog color television receiver circuit that compares the frequency and phase of the incoming burst signal with those of the locally generated 3.579545-megahertz chroma oscillator and delivers a correction voltage to ensure that the color portions of the picture will be in exact register with the black-and-white portions on the screen. { 'kəl-ər, fāz di'tek-tər }
- color picture signal** [COMMUN] The electric signal that represents complete color picture information, excluding all synchronizing signals. { 'kəl-ər, pik-čar, sig-nəl }
- color picture tube** [ELECTR] A cathode-ray tube having three different colors of phosphors, so that when these are appropriately scanned and excited, a color picture is obtained. Also known as color kinescope; color television picture tube; tricolor picture tube. { 'kəl-ər, pik-čar, tüb }
- color purity** [ELECTR] Absence of undesired colors in the spot produced on the screen by each beam of a color picture tube. { 'kəl-ər, pyūr-əd-ē }
- color-saturation control** See chroma control. { 'kəl-ər sach-ə'rā-shən kən'trəl }
- color signal** [COMMUN] Any signal that controls the chromaticity values of a color picture in a video system. { 'kəl-ər, sig-nəl }
- color subcarrier** See chrominance subcarrier. { 'kəl-ər səb'kar-ē-ər }
- color-subcarrier oscillator** See chroma oscillator. { 'kəl-ər səb'kar-ē-ər 'ä-sə,läd-ər }
- color-subcarrier reference** See chrominance-carrier reference. { 'kəl-ər səb'kar-ē-ər 'ref-rəns }
- color sync signal** [COMMUN] A signal that is transmitted with each line of an analog color television broadcast to ensure that the color relationships in the transmitted signal are established and maintained in the receiver. { 'kəl-ər 'sɪŋk, sig-nəl }
- color television** [COMMUN] A television system that reproduces an image approximately in its original colors. { 'kəl-ər 'tel-ə,vɪzh-ən }
- color television picture tube** See color picture tube. { 'kəl-ər 'tel-ə,vɪzh-ən 'pik-čar, tüb }
- color transmission** [COMMUN] In television, the transmission of a signal waveform that represents both the brightness values and the chromaticity values in the picture. { 'kəl-ər tranz'mɪʃ-ən }
- Colpitts oscillator** [ELECTR] An oscillator in which a parallel-tuned tank circuit has two voltage-dividing capacitors in series, with their common connection going to the cathode in the electron-tube version and the emitter circuit in the transistor version. { 'kɒl,ɪts, əs-ə,läd-ər }
- column** [COMPUT SCI] A vertical arrangement of characters or other expressions, usually referring to a specific print position on a printer. { 'kəl-əm }
- column order** [COMPUT SCI] The storage of a matrix  $a(m,n)$  as  $a(1,1), a(2,1), \dots, a(m,1), a(1,2), \dots$  { 'kəl-əm, ɔr-dər }
- column printer** [COMPUT SCI] A small line printer used with some calculators to provide hard-copy printout of input and output data; typically consists of 20 columns of numerals and a limited number of alphabetic or other identifying characters. { 'kəl-əm, 'prɪnt-ər }
- COM** See computer output on microfilm.
- coma** [ELECTR] A cathode-ray tube image defect that makes the spot on the screen appear comet-shaped when away from the center of the screen. { 'kō-mə }
- coma lobe** [ELECTROMAG] Side lobe that occurs in the radiation pattern of a microwave antenna when the reflector alone is tilted back and forth to sweep the beam through space because the feed is no longer always at the center of the reflector; used to eliminate the need for a rotary joint in the feed waveguide. { 'kō-mə, 'ləb }
- comb antenna** [ELECTROMAG] A broad-band antenna for vertically polarized signals, in which half of a fishbone antenna is erected vertically and fed against ground by a coaxial line. { 'kōm ən,ten-ə }
- comb filter** [ELECTR] A wave filter whose frequency spectrum consists of a number of equispaced elements resembling the teeth of a comb. { 'kōm, 'fɪl-tər }
- combinational circuit** [ELECTR] A switching circuit whose outputs are determined only by the concurrent inputs. { ,kəm-bə'nā-shən-əl 'sər-kət }
- combination cable** [ELEC] A cable having conductors grouped in both quads and pairs. { ,kəm-bə'nā-shən 'kə-bəl }
- combination distributing frame** [ELEC] Frame which combines the functions of a main distributing frame and an intermediate distributing frame. { ,kəm-bə'nā-shən dɪs'trɪb-yəd-ɪŋ, 'frām }
- combined head** See read/write head. { kəm'bɪnd 'hed }
- combiner circuit** [ELECTR] The circuit that combines the luminance and chrominance signals with the synchronizing signals in a color television camera chain. { kəm'bɪn-ər, 'sər-kət }
- combining network** [COMPUT SCI] A switching system for accessing memory modules in a multiprocessor, in which each switch remembers the memory addresses it has used, and can then satisfy several requests with a single memory access. { kəm'bɪn-ɪŋ 'net,wɜrk }
- comfort control** [ENG] Control of temperature, humidity, flow, and composition of air by using heating and air-conditioning systems, ventilators, or other systems to increase the comfort of people in an enclosure. { 'kəm-fɔrt kən'trəl }
- COMIT** [COMPUT SCI] A user-oriented, general-purpose, symbol-manipulation programming language for computers. { 'kō,mɪt }
- command** [COMPUT SCI] A signal that initiates a predetermined type of computer operation that is defined by an instruction. [CONT SYS] An independent signal in a feedback control system.



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from which the dependent signals are controlled  
in a predetermined manner. { kò'mànd }

**command button** [COMPUT SCI] A small rectangle  
on a graphical user interface with a command,  
such as open, close, OK, or print, that is immedi-  
ately activated upon selection of the button.  
{ kò'mànd ,bat-ən }

**command code** See operation code. { kò'mànd  
,kòd }

**command control program** [COMPUT SCI] The in-  
terface between a time-sharing computer and  
its users by means of which they can create,  
edit, save, delete, and execute their programs.  
{ kò'mànd kàn, tròl ,prò-gràm }

**command-driven program** [COMPUT SCI] A com-  
puter program that accepts command words and  
statements typed in by the user. { kò'mànd  
,driv-ən 'prò-gràm }

**command interpreter** [COMPUT SCI] A program  
that processes commands and other input and  
output from an active terminal in a time-sharing  
system. { kò'mànd ,in'tar-prò-tar }

**command language** [COMPUT SCI] The language of  
an operating system, through which the users of  
a data-processing system describe the require-  
ments of their tasks to that system. Also known  
as job control language. { kò'mànd ,laj-gwîj }

**command level** [COMPUT SCI] The ability to con-  
trol a computer's operating system through the  
use of commands, normally available only to  
computer operators. { kò'mànd ,lev-əl }

**command line** [COMPUT SCI] On a display screen,  
the space following a prompt (such as \$) where a  
text instruction to a computer or device is typed.  
{ kò'mànd ,lîn }

**command list** See CLIST. { kò'mànd ,list }

**command mode** [COMPUT SCI] The status of a  
terminal in a time-sharing environment enabling  
the programmer to use the command control  
program. { kò'mànd ,mòd }

**command processor** [COMPUT SCI] A computer  
program that converts a limited number of user  
commands into the machine commands that  
direct the operating system. Also known as  
command shell. { kò'mànd 'prä,ses-ər }

**command pulses** [ELECTR] The electrical repre-  
sentations of bit values of 1 or 0 which control  
input/output devices. { kò'mànd ,pəl-səs }

**command set** [COMMUN] A radio set used to  
receive or give commands, as between one  
aircraft and another or between an aircraft and  
the ground. { kò'mànd ,set }

**command shell** See command processor.  
{ kò'mànd ,shel }

**comment** [COMPUT SCI] An expression identifying  
or explaining one or more steps in a routine,  
which has no effect on execution of the routine.  
{ 'käm,ent }

**comment code** [COMPUT SCI] One or more char-  
acters identifying a comment. { 'käm,ent ,kòd }

**comment out** [COMPUT SCI] To render a statement  
in a computer program inactive by making it a  
comment. { 'kä,ment 'aüt }

**common area** [COMPUT SCI] An area of storage which  
two or more routines share. { 'käm-ən 'ter-è-ə }

**common-base connection** See grounded-base  
connection. { 'käm-ən 'bäs kò'nek-shən }

**common-base feedback oscillator** [ELECTR] A  
bipolar transistor amplifier with a common-  
base connection and a positive feedback network  
between the collector (output) and the emitter  
(input). { 'käm-ən 'bäs 'féd,bak ,äs-ə,läd-ər }

**common battery** [COMMUN] System of current  
supply where all direct current energy for a unit of  
a telephone system is supplied by one source in a  
central office or exchange. { 'käm-ən 'bäd-ə-rè }

**common branch** [ELEC] A branch of an elec-  
trical network which is common to two or  
more meshes. Also known as mutual branch.  
{ 'käm-ən 'branch }

**common business-oriented language** See COBOL.  
{ 'käm-ən 'biz-nəs 'ör-è,ent-əd ,laj-gwîj }

**common carriage** See transmission access.  
{ 'käm-ən 'kar-ij }

**common-channel interoffice signaling** [COM-  
MUN] A method of signaling in a telecommuni-  
cations switching system in which a network of sep-  
arate data communication paths separate from  
the communications transmission is used for  
transmitting all signaling information between  
offices. Abbreviated CCIS. { 'käm-ən 'chan-əl  
,in-tər,ò-fos 'sig-nəl-iŋ }

**common-collector connection** See grounded-  
collector connection. { 'käm-ən kò'lek-tər kò  
'nek-shən }

**common control unit** [COMPUT SCI] Control unit  
that is shared by more than one machine.  
{ 'käm-ən kàn'tròl ,yü-nät }

**common declaration statement** [COMPUT SCI] A  
nonexecutable statement in FORTRAN which  
allows specified arrays or variables to be stored in  
an area available to other programs. { 'käm-ən  
,dek-là-rä-shən ,stät-mənt }

**common-drain amplifier** [ELECTR] An amplifier  
using a field-effect transistor so that the input  
signal is injected between gate and drain, while  
the output is taken between the source and  
drain. Also known as source-follower amplifier.  
{ 'käm-ən 'drän 'am-plə,fi-ər }

**common-emitter connection** See grounded-emit-  
ter connection. { 'käm-ən i'mid-ər kò'nek-shən }

**common-gate amplifier** [ELECTR] An amplifier  
using a field-effect transistor in which the gate is  
common to both the input circuit and the output  
circuit. { 'käm-ən 'gät 'am-plə,fi-ər }

**common gateway interface** [COMPUT SCI] A pro-  
tocol that allows the secure data transfer to and  
from a server and a network user by means of a  
program which resides on the server and handles  
the transaction. For example, if an intranet user  
sent a request with a Web browser for database  
information, a CGI program would execute on  
the server, retrieve the information from the  
database, format it in HTML, and send it back to  
the user. Abbreviated CGI. { 'käm-ən ,gät,wä  
'in-tər,fäs }

**common language** [COMPUT SCI] A machine-  
readable language that is common to a  
group of computers and associated equipment.  
{ 'käm-ən 'laj-gwîj }

## common mode

**common mode** [ELECTR] Having signals that are identical in amplitude and phase at both inputs, as in a differential operational amplifier. { |kām-ən ,mōd }

**common-mode error** [ELECTR] The error voltage that exists at the output terminals of an operational amplifier due to the common-mode voltage at the input. { |kām-ən ,mōd 'er-ər }

**common-mode gain** [ELECTR] The ratio of the output voltage of a differential amplifier to the common-mode input voltage. { |kām-ən ,mōd 'gān }

**common-mode input capacitance** [ELECTR] The equivalent capacitance of both inverting and noninverting inputs of an operational amplifier with respect to ground. { |kām-ən ,mōd 'in ,pūt kə'pas-əd-əns }

**common-mode input impedance** [ELECTR] The open-loop input impedance of both inverting and noninverting inputs of an operational amplifier with respect to ground. { |kām-ən ,mōd 'in ,pūt im'ped-əns }

**common-mode input resistance** [ELECTR] The equivalent resistance of both inverting and noninverting inputs of an operational amplifier with respect to ground or reference. { |kām-ən ,mōd 'in ,pūt ri'zis-təns }

**common-mode rejection** [ELECTR] The ability of an amplifier to cancel a common-mode signal while responding to an out-of-phase signal. Also known as in-phase rejection. { |kām-ən ,mōd ri'jek-shən }

**common-mode rejection ratio** [ELECTR] The ratio of the gain of an amplifier for difference signals between the input terminals, to the gain for the average or common-mode signal component. Abbreviated CMRR. { |kām-ən ,mōd ri'jek-shən 'rā-shō }

**common-mode signal** [ELECTR] A signal applied equally to both ungrounded inputs of a balanced amplifier stage or other differential device. Also known as in-phase signal. { |kām-ən ,mōd 'sig-nəl }

**common-mode voltage** [ELECTR] A voltage that appears in common at both input terminals of a device with respect to the output reference (usually ground). { |kām-ən ,mōd 'vōl-tij }

**common object request broker** [COMPUT SCI] A system that provides interoperability among objects in a heterogeneous, distributed, object-oriented environment in a way that is transparent to the programmer; its design is based on the OMG object model. Abbreviated CORBA. { |kām-ən |əb-jekt ri'kwest ,brō-kər }

**common return** [ELECTR] A return conductor that serves two or more circuits. { |kām-ən ri'tərn }

**common-source amplifier** [ELECTR] An amplifier stage using a field-effect transistor in which the input signal is applied between gate and source and the output signal is taken between drain and source. { |kām-ən ,sōrs 'am-plə-fi-ər }

**common storage** [COMPUT SCI] A section of memory in certain computers reserved for temporary storage of program outputs to be used as input for other programs. { |kām-ən 'stōr-ij }

**common-user channel** [COMMUN] Any of the communications channels which are available to all authorized agencies for transmission of command, administrative, and logistic traffic. { |kām-ən ,yü-zər ,chan-əl }

**common-user circuit** [ELEC] A circuit designed to furnish a communications service to a number of users. { |kām-ən ,yü-zər ,sər-kət }

**communicating word processor** [COMPUT SCI] A word processor that can be linked to other word processors to exchange information. { kə'myü-nə ,kād-ig 'wōrd ,prə'ses-ər }

**communication** [COMMUN] The transmission of intelligence between two or more points over wires or by radio; the terms telecommunication and communication are often used interchangeably, but telecommunication is usually the preferred term when long distances are involved. { kə'myü-nə'kā-shən }

**communication band** [COMMUN] The band of frequencies effectively occupied by a radio transmitter for the type of transmission and the speed of signaling used. { kə'myü-nə'kā-shən ,bænd }

**communication bus** [COMMUN] A device that transfers control, timing, and data signals between switching processor subsystems; designed to provide physical and electrical isolation, to provide for simple addition of units on an in-service basis, and to provide pluggable connection for efficient factory testing, installation, and maintenance. { kə'myü-nə'kā-shən ,bəs }

**communication cable** [COMMUN] A metallic wire or fiber-optic material used in the telephone industry to connect customers to their local switching centers and to interconnect local and long-distance switching centers. { kə'myü-nə'kā-shən ,kā-bəl }

**communication channel** [COMMUN] The wire or radio channel that serves to convey intelligence between two or more terminals. { kə'myü-nə'kā-shən ,chan-əl }

**communication countermeasure** [COMMUN] Any electronic countermeasure against communications, such as jamming. { kə'myü-nə'kā-shən 'kaunt-ər ,mez-ər }

**communication engineering** [COMMUN] The design, construction, and operation of all types of equipment used for radio, wire, or other types of communication. { kə'myü-nə'kā-shən en-jə'nir-ig }

**communication link** See data link. { kə'myü-nə'kā-shən ,liŋk }

**communication protocol** [COMPUT SCI] Procedures that enable devices within a computer network to exchange information. Also known as protocol. { kə'myü-nə'kā-shən 'prōd-ə ,kól }

**communication receiver** [ELECTR] A receiver designed especially for reception of voice or code messages transmitted by radio communication systems. { kə'myü-nə'kā-shən ri'sē-vər }

**communications** [ENG] The science and technology by which information is collected from an originating source, transformed into electric currents or fields, transmitted over electrical networks or space to another point,

MUN] Any of the rich are available for transmission of logistic traffic.

A circuit designations service to a (rū-zar, sar-kat) or [COMPUT SCI] can be linked to range information, es-ar }

transmission of more points over communication is exchanged usually the processes are involved.

N] The band of by a radio transmission and the speed (kā-shān, band)

A device that data signals between systems; designed for isolation, to units on an in- jiggable connection, installation, and hon, bās }

A metallic wire the telephone s to their lo- terconnect ion centers. { kə

JN] The wire or convey intelligence terminals. { kə

[COMMUN] Any in- st communication, myū-nə'kā-

COMMUN] The den- of all types wire, or other (yū-nə'kā-shān

k. { kə, myū-

IT SCI] Proce- a computer Also known as (ōd-ə, kōl)

A receiver de- vice or code communication (ē-vor)

ze and tech- ollected from (d into elec- d over elec- other point.

and reconverted into a form suitable for interpretation by a receiver. { kə, myū-nə'kā-shānz }

**communications control unit** [COMMUN] A device that handles data transmission between components of a communications network, and performs related functions such as multiplexing, message switching, and code conversion. Abbreviated CCU. { kə, myū-nə'kā-shānz kan'trōl ,yū-nət }

**communications intelligence** [COMMUN] Technical and intelligence information derived from communications by other than the intended recipients. { kə, myū-nə'kā-shānz in'tel-ə-jənz }

**communications language** [COMMUN] A language structure complete with conventions, syntax, and character set, used primarily for conveying knowledge of processes between two participants. { kə, myū-nə'kā-shānz ,lāŋ-gwɪl }

**communications network** [COMMUN] Organization of stations capable of intercommunications but not necessarily on the same channel. { kə ,myū-nə'kā-shānz ,net,wɜ:k }

**communications package** [COMPUT SCI] A software product that specifies communications protocols for data transmission within a computer network or between a computer and its peripheral equipment. { kə, myū-nə'kā-shānz ,pak-ij }

**communication speed** [COMMUN] The rate at which information is transmitted over a communications channel, adjusted for redundancies. { kə, myū-nə'kā-shānz ,spɛd }

**communications program** [COMPUT SCI] A computer program that transmits data to and receives data from local and remote terminals and other computers. { kə, myū-nə'kā-shānz ,prō-ɡrəm }

**communications relay station** [COMMUN] Facility for rapidly passing message traffic from one tributary to another by automatic, semi-automatic, or manual means, or by electrically connecting circuits (circuit switching) between two tributaries for direct transmission. { kə ,myū-nə'kā-shānz 'rē,lə ,stā-shən }

**communications satellite** [ENG] An orbiting, artificial earth satellite that relays radio, television, and other signals between ground terminal stations thousands of miles apart. Also known as radio relay satellite; relay satellite. { kə ,myū-nə'kā-shānz 'səd-ə,lɪt }

**communications traffic** [COMMUN] All transmitted and received messages. { kə, myū-nə'kā-shānz ,traf-ɪk }

**communication system** [COMMUN] A telephone, radio, television, data transmission, or other system in which information-bearing signals originated at one place are reproduced at a distant point. { kə, myū-nə'kā-shānz ,sɪs-təm }

**communications zone indicator** [ELECTR] Device to indicate whether or not long-distance high-frequency broadcasts are successfully reaching their destinations. { kə, myū-nə'kā-shānz ,zōn 'ɪn-da,kād-ər }

**communication theory** [COMMUN] The mathematical theory of the communication of information from one point to another. { kə ,myū-nə'kā-shānz ,thē-ə-rē }

**community antenna television** See cable television. { kə myū-nə-dē an'ten-ə 'tel-ə,vɪz-ən }

**community dial office** [COMMUN] Small dial office with no employees located in the building serving an exchange area. { kə myū-nə-dē 'dɪl ,dɪf-əs }

**commutating capacitor** [ELECTR] A capacitor used in gas-tube rectifier circuits to prevent the anode from going highly negative immediately after extinction. { 'kəm-yə,tād-ɪŋ kə'pas-əd-ər }

**commutating reactance** [ELECTR] An inductive reactance placed in the cathode lead of a three-phase mercury-arc rectifier to ensure that tube current holds over during transfer of conduction from one anode to the next. { 'kəm-yə,tād-ɪŋ rē'ak-təns }

**commutating reactor** [ELEC] A reactor found primarily in silicon controlled rectifier (SCR) converters where it is connected in series with a commutation capacitor to form a highly efficient resonant circuit used to cause a current oscillation which turns off (commutates) the conducting SCR. { 'kəm-yə,tād-ɪŋ rē'ak-tər }

**commutation** [COMMUN] The sampling of various quantities in a repetitive manner for transmission over a single channel in telemetering. { 'kəm-yə'tā-shən }

**commutator head** [ELEC] The butt end of a commutator. { 'kəm-yə,tād-ər ,hed }

**commutator motor** [ELEC] An electric motor having a commutator. { 'kəm-yə,tād-ər ,mōd-ər }

**commutator pulse** [COMPUT SCI] One of a series of pulses indicating the beginning or end of a signal representing a single binary digit in a computer word. Also known as position pulse; P pulse. { 'kəm-yə,tād-ər ,pʌls }

**commutator switch** [ELEC] A switch that performs a set of switching operations in repeated sequential order, such as is required for telemetering many quantities. Also known as sampling switch; scanning switch. { 'kəm-yə,tād-ər ,swɪtʃ }

**compact disk** [COMMUN] A nonmagnetic (optical) disk, usually  $4\frac{3}{4}$  inches (12 centimeters) in diameter, used for audio or video recording or for data storage; information is recorded using a laser beam to burn microscopic pits into the surface and is accessed by means of a lower-power laser to sense the presence or absence of pits. Abbreviated CD. { 'kəm,pak 'dɪsk }

**compact-disk erasable** See CD-RW. { 'kəm,pak ,dɪsk 'ɪrās-ə-bəl }

**compact-disk read-only memory** [COMPUT SCI] A compact disk used for the permanent storage of up to approximately 500 megabytes of data. Abbreviated CD-ROM. { 'kəm,pak 'dɪsk 'rɛd 'ɒn-lē 'mem-rē }

**compact-disk recordable** See CD-R. { 'kəm,pak ,dɪsk rɪ'kɔrd-ə-bəl }

## compact-disk rewritable

**compact-disk rewritable** See CD-RW. {käm,pak ,disk ,rē'rid-ə-bəl }

**compact-disk write-once** See CD-R. {käm,pak ,disk ,rit 'wəns }

**compacting garbage collection** [COMPUT SCI] The physical rearrangement of data cells so that those cells whose contents are no longer useful (garbage) are compressed into a contiguous array. { ,käm'pak-tij 'gär-bij kə'lek-shən }

**compaction** [COMPUT SCI] A technique for reducing the space required for data storage without losing any information content. Also known as squishing. { kəm'pak-shən }

**companded single-sideband system** [COMMUN] A long-haul microwave telecommunications system that employs repeaters and single-sideband amplitude modulation and achieves subjective noise improvement by companding to reduce circuit noise between syllables and during pauses in speech. Abbreviated CSSB system. { kəm'pan-dəd ;siŋ-gəl ;sɪd,bənd ,sis-təm }

**companding** [ELECTR] A process in which compression is followed by expansion; often used for noise reduction in equipment, in which case compression is applied before noise exposure and expansion after exposure. { kəm 'pænd-ɪŋ }

**compandor** [ELECTR] A system for improving the signal-to-noise ratio by compressing the volume range of the signal at a transmitter or recorder by means of a compressor and restoring the normal range at the receiving or reproducing apparatus with an expander. { kəm'pænd-ər }

**comparator** [COMPUT SCI] A device that compares two transcriptions of the same information to verify the accuracy of transcription, storage, arithmetical operation, or some other process in a computer, and delivers an output signal of some form to indicate whether or not the two sources are equal or in agreement. [CONT SYS] A device which detects the value of the quantity to be controlled by a feedback control system and compares it continuously with the desired value of that quantity. { kəm'par-əd-ər }

**comparator circuit** [ELECTR] An electronic circuit that produces an output voltage or current whenever two input levels simultaneously satisfy predetermined amplitude requirements; may be linear (continuous) or digital (discrete). { kəm 'par-əd-ər ,sər-kət }

**comparator probe** [COMPUT SCI] A component of a hardware monitor that is used to sense the number of bits that appear in parallel, as in an address register. { kəm'par-əd-ər ,prəb }

**comparing unit** [ELECTR] An electromechanical device which compares two groups of timed pulses and signals to establish either identity or nonidentity. { kəm'per-ɪŋ ,yü-nət }

**comparison** [COMPUT SCI] A computer operation in which two numbers are compared as to identity, relative magnitude, or sign. { kəm'par-ə-sən }

**comparison bridge** [ELECTR] A bridge circuit in which any change in the output voltage with respect to a reference voltage creates a cor-

responding error signal, which, by means of negative feedback, is used to correct the output voltage and thereby restore bridge balance. { kəm'par-ə-sən ,brɪdʒ }

**comparison indicators** [COMPUT SCI] Registers, one of which is activated during the comparison of two quantities to indicate whether the first quantity is lower than, equal to, or greater than the second quantity. { kəm'par-ə-sən ,ɪn-də ,kæd-ərɪz }

**compatibility** [COMPUT SCI] The ability of one device to accept data handled by another device without conversion of the data or modification of the code. [SYS ENG] The ability of a new system to serve users of an old system. { kəm ,pad-ə'bɪl-ə-dē }

**compatibility mode** [COMPUT SCI] A feature of a computer or operating system that enables it to run programs written for another system. { kəm ,pad-ə'bɪl-ə-dē ,mōd }

**compatible color television system** [COMMUN] A color television system that permits substantially normal monochrome reception of the transmitted color picture signal on a typical unaltered monochrome receiver. { kəm'pad-ə-bəl 'kəl-ər 'tel-ə,vɪz-ən ,sis-təm }

**compatible discrete four-channel sound** [ENG ACOUS] A sound system in which a separate channel is maintained from each of the four sets of microphones at the recording studio or other input location to the four sets of loudspeakers that serve as the output of the system. Abbreviated CD-4 sound. { kəm'pad-ə-bəl dɪs'krɪt [fɔr 'ʃan-əl 'saʊnd ] }

**compatible monolithic integrated circuit** [ELECTR] Device in which passive components are deposited by thin-film techniques on top of a basic silicon-substrate circuit containing the active components and some passive parts. { kəm'pad-ə-bəl ,mən-ə'lɪθ-ɪk 'ɪn-tə,grəd-əd 'sər-kət }

**compatible single-sideband system** [COMMUN] A single-sideband system that can be received by an ordinary amplitude-modulation radio receiver without distortion. { kəm'pad-ə-bəl ,siŋ-gəl'sɪd ,bənd ,sis-təm }

**compensated amplifier** [ELECTR] A broad-band amplifier in which the frequency range is extended by choice of circuit constants. { 'käm-pən,səd-əd 'am-plə,fɪ-ər }

**compensated-loop direction finder** [ELECTR] A direction finder employing a loop antenna and a second antenna system to compensate for polarization error. { 'käm-pən,səd-əd ,lʊp də'rek-shən ,fɪnd-ər }

**compensated semiconductor** [ELECTR] Semiconductor in which one type of impurity or imperfection (for example, donor) partially cancels the electrical effects on the other type of impurity or imperfection (for example, acceptor). { 'käm-pən,səd-əd 'sem-i-kən'dək-tər }

**compensated volume control** See loudness control. { 'käm-pən,səd-əd 'vɔl-yəm kən'trɒl }

**compensating capacitor** See balancing capacitor. { 'käm-pən,səd-ɪŋ kə'pəs-əd-ər }

which, by means of a feedback loop, is used to correct the output of the store bridge balance.

**COMPUT SCI** Register during the comparison of the data to determine whether the first value is equal to, or greater than, the second value. {kəm'pju:tə'sa:ns} (in-fo)

[The ability of one device to be controlled by another device, such as data or modification of the ability of a new system to be controlled by an old system. {kəm'pju:tə'sa:ns}

**IT SCI** A feature of a system that enables it to be controlled by another system. {kəm'pju:tə'sa:ns}

**system** [COMMUN] A set of interrelated parts that permits substitution of one part for another without affecting the operation of the system. Abbreviated: sys. {kəm'sistəm}

**innel sound** [ENG] A sound which is produced by a separate speaker for each of the four sets of loudspeakers in a stereo system. Abbreviated: in-sound. {kəm'pju:tə'sa:ns}

**ad circuit** [ELECTR] A circuit in which the components are connected in a series-parallel arrangement on top of the circuit containing the active and passive parts. {kəm'pju:tə'sa:ns}

**stem** [COMMUN] A signal that can be received by a radio receiver. {kəm'stem}

**ELECTR** A broad-frequency range circuit constants. {kəm'pju:tə'sa:ns}

**nder** [ELECTR] A feedback loop antenna used to compensate for the effects of the feedback loop. {kəm'pju:tə'sa:ns}

[ELECTR] Semi-conductor of impurity or donor partially compensated by the other type of impurity, acceptor. {kəm'pju:tə'sa:ns}

**loudness control capacitor** A capacitor used for controlling the loudness of a signal. {kəm'pju:tə'sa:ns}

**compensating leads** [ENG] A pair of wires, similar to the working leads of a resistance thermometer or thermocouple, which are run alongside the working leads and are connected in such a way that they balance the effects of temperature changes in the working leads. {kəm'pən'seɪtɪŋ'li:dz}

**compensating network** [CONT SYS] A network used in a low-energy-level method for suppression of excessive oscillations in a control system. {kəm'pən'seɪtɪŋ'net,wɜ:k}

**compensation** [CONT SYS] Introduction of additional equipment into a control system in order to reshape its root locus so as to improve system performance. Also known as stabilization. [ELECTR] The modification of the amplitude-frequency response of an amplifier to broaden the bandwidth or to make the response more nearly uniform over the existing bandwidth. Also known as frequency compensation. {kəm'pən'seɪʃən}

**compensation signals** [ENG] In telemetry, signals recorded on a tape, along with the data and in the same track as the data, used during the playback of data to correct electrically the effects of tape-speed errors. {kəm'pən'seɪʃən'si:gnə:lz}

**compensator** [CONT SYS] A device introduced into a feedback control system to improve performance and achieve stability. Also known as filter. [ELECTR] A component that offsets an error or other undesired effect. {kəm'pən'seɪtə}

**compile** [COMPUT SCI] To prepare a machine-language program automatically from a program written in a higher programming language, usually generating more than one machine instruction for each symbolic statement. {kəm'pɪl}

**compile-and-go** [COMPUT SCI] A continuous sequence of steps that combine compilation, loading, and execution of a computer program. {kəm'pɪl ən'gəʊ}

**compiler** [COMPUT SCI] A program to translate a higher programming language into machine language. Also known as compiling routine. {kəm'pɪl-ər}

**compiler-level language** [COMPUT SCI] A higher-level language normally supplied by the computer manufacturer. {kəm'pɪl-ər'lev-əl'leɪŋwɜ:ʒ}

**compiler listing** [COMPUT SCI] A report that is produced by a compiler and contains an annotated printout of the source program together with other useful information. {kəm'pɪ-lɪstɪŋ}

**compiler system** [COMPUT SCI] The set consisting of a higher-level language, such as FORTRAN, and its compiler which translates the program written in that language into machine-readable instructions. {kəm'pɪl-ər'sɪs-təm}

**compiler toggle** [COMPUT SCI] A piece of information transmitted to a compiler to activate some special feature or otherwise control the way in which the compiler operates. {kəm'pɪ-lər'təʒ}

**compiling routine** See compiler. {kəm'pɪl-ɪŋ'rʊ:tɪn}

**complementary** [ELECTR] Having *pnp* and *npn* or *p-* and *n-*channel semiconductor elements on or within the same integrated-circuit substrate or working together in the same functional amplifier state. {kəm'plə'men-trē}

**complementary constant-current logic** [ELECTR] A type of large-scale integration used in digital integrated circuits and characterized by high density and very fast switching times. Abbreviated: CCCL, C<sup>3</sup>L. {kəm'plə'men-trē'kɒn'stənt'kə-rənt'ləɪ-ɪk}

**complementary logic switch** [ELECTR] A complementary transistor pair which has a common input and interconnections such that one transistor is on when the other is off, and vice versa. {kəm'plə'men-trē'ləɪ-ɪk swɪtʃ}

**complementary metal oxide semiconductor device** See CMOS device. {kəm'plə'men-trē'ɪmed-əl'ɒksɪd'sem-i-kən,dəktər'di'vɪs}

**complementary symmetry** [ELECTR] A circuit using both *pnp* and *npn* transistors in a symmetrical arrangement that permits push-pull operation without an input transformer or other form of phase inverter. {kəm'plə'men-trē'sɪm-ə-trē}

**complementary transistors** [ELECTR] Two transistors of opposite conductivity (*pnp* and *npn*) in the same functional unit. {kəm'plə'men-trē'tran'zɪst-ərs}

**complement number system** [COMPUT SCI] System of number handling in which the complement of the actual number is operated upon; used in some computers to facilitate arithmetic operations. {kəm'plə'mənt'nəm-bər,sɪs-təm}

**complete carry** [COMPUT SCI] In parallel addition, an arrangement in which the carries that result from the addition of carry digits are allowed to propagate from place to place. {kəm'plɛt'kə-rɪ}

**complete operation** [COMPUT SCI] An operation which includes obtaining all operands from storage, performing the operation, returning resulting operands to storage, and obtaining the next instruction. {kəm'plɛt'ɒp-ə-rəʃən}

**complete routine** [COMPUT SCI] A routine, generally supplied by a computer manufacturer, which does not have to be modified by the user before being applied. {kəm'plɛt'rʊ:tɪn}

**complex data type** [COMPUT SCI] A scalar data type which contains two real fields representing the real and imaginary components of a complex number. {kəm'pleks'dad-ə'tɪp}

**complex declaration statement** [COMPUT SCI] A nonexecutable statement in FORTRAN used to specify that the type of identifier appearing in the program is of the form  $a + bi$ , where  $i$  is the square root of  $-1$ . {kəm'pleks'dek'lə'rəʃən'stət-mənt}

**complex frequency** [ENG] A complex number used to characterize exponential and damped sinusoidal motion in the same way that an ordinary frequency characterizes simple harmonic motion; designated by the constant  $s$  corresponding to a motion whose amplitude is given by  $Ae^{st}$ , where  $A$  is a constant and  $t$  is time. {kəm'pleks'frɛ-kwəns-ē}

## complex impedance

**complex impedance** See electrical impedance. { 'käm,pleks im'péd-əns }

**complex instruction set computer** [COMPUT SCI] A computer in which relatively high-level or complex hardware incorporating microcode is used to implement a relatively large number of instructions. Abbreviated CISC. { 'käm,pleks in'strək-shən ,set kəm,pyüd-ər }

**complexity** [COMPUT SCI] The number of elementary operations used by a program or algorithm to accomplish a given task. { kəm'pleks-əd-ē }

**complex permittivity** [ELEC] A property of a dielectric, equal to  $\epsilon_0(C/C_0)$ , where C is the complex capacitance of a capacitor in which the dielectric is the insulating material when the capacitor is connected to a sinusoidal voltage source, and  $C_0$  is the vacuum capacitance of the capacitor. { 'käm,pleks ,pər-mə'tiv-əd-ē }

**complex reflector** [ENG] A structure or group of structures having many radar-reflecting surfaces facing in different directions. { 'käm,pleks ri'flek-tər }

**complex relative attenuation** [ELECTR] The ratio of the peak output voltage, in complex notation, of an electric filter to the output voltage at the frequency being considered. { 'käm,pleks 'rel-əd-iv-ə ,ten-yə'wā-shən }

**complex target** [ENG] A radar target composed of a number of reflecting surfaces that, in the aggregate, are smaller in all dimensions than the resolution capabilities of the radar. { 'käm ,pleks 'tār-gət }

**compliant substrate** [ELECTR] A semiconductor substrate into which an artificially formed interface is introduced near the surface which makes the substrate more readily deformable and allows it to support a defect-free semiconductor film of essentially any lattice constant, with dislocations forming in the substrate instead of in the film. Also known as sacrificial compliant substrate. { kəm'plī-ənt 'səb,strät }

**component** [ELEC] Any electric device, such as a coil, resistor, capacitor, generator, line, or electron tube, having distinct electrical characteristics and having terminals at which it may be connected to other components to form a circuit. Also known as circuit element; element. { kəm'pō-nənt }

**component-failure-impact analysis** [SYS ENG] A study that attempts to predict the consequences of failures of the major components of a system. Abbreviated CFIA. { kəm'pō-nənt 'fāl-yər 'im ,pakt ə,nal-ə-səs }

**component name** See metavariable. { kəm'pō-nənt ,nām }

**component symbol** [ELEC] A graphical design used to represent a component in a circuit diagram. { kəm'pō-nənt ,sɪm-bəl }

**composite** [ENG ACOUS] A re-recording consisting of at least two elements. { kəm'pāz-ət }

**composite balance** [ELEC] An electric balance made by modifying the Kelvin balance to measure amperage, voltage, or wattage. { kəm'pāz-ət 'bal-əns }

**composite cable** [ELEC] Cable in which conductors of different gages or types are combined under one sheath. { kəm'pāz-ət 'kā-bəl }

**composite circuit** [ELECTR] A circuit used simultaneously for voice communication and telegraphy, with frequency-discriminating networks serving to separate the two types of signals. { kəm'pāz-ət 'sər-kət }

**composite color signal** [COMMUN] The analog color television picture signal plus all blanking and synchronizing signals. Also known as composite picture signal. { kəm'pāz-ət 'kəl-ər ,sig-nəl }

**composite color sync** [COMMUN] The signal comprising all the synchronization signals necessary for proper operation of an analog color television receiver. { kəm'pāz-ət 'kəl-ər ,sɪŋk }

**composite filter** [ELECTR] A filter constructed by linking filters of different kinds in series. { kəm'pāz-ət 'fɪl-tər }

**composite picture signal** See composite color signal. { kəm'pāz-ət 'pɪk-čər ,sig-nəl }

**composite pulse** [ELECTR] A pulse composed of a series of overlapping pulses received from the same source over several paths in a pulse navigation system. { kəm'pāz-ət 'pʌls }

**composite set** [ELECTR] Assembly of apparatus designed to provide one end of a composite circuit. { kəm'pāz-ət 'set }

**composite video signal** [COMMUN] The video-only portion of the analog color television signal used in the United States, in which red, green, and blue signals are encoded. { kəm'pāz-ət 'vɪd-ē-ō ,sig-nəl }

**composite wave filter** [ELECTR] A combination of two or more low-pass, high-pass, band-pass, or band-elimination filters. { kəm'pāz-ət 'wāv ,fɪl-tər }

**composition resistor** See carbon resistor. { ,käm-pə'zɪʃ-ən rɪ'zɪs-tər }

**compound cryosar** [ELECTR] A cryosar consisting of two normal cryosars with different electrical characteristics in series. { 'käm,paünd 'krɪ-ō ,sär }

**compound document** [COMPUT SCI] A document that contains two or more different data structures, such as text, graphics, and sound. { ,käm ,paünd 'dāk-yə-mənt }

**compound field winding** [ELEC] A winding composed of shunt and series coils that act either together or against each other. { 'käm,paünd 'fɪld ,wɪnd-ɪŋ }

**compound generator** [ELEC] A direct-current generator which has both a series field winding and a shunt field winding, both on the main poles with the shunt field winding on the outside. { 'käm,paünd 'jen-ə'rād-ər }

**compound magnet** [ELEC] A permanent magnet that is constructed from a number of thin magnets having the same shape. { 'käm,paünd 'mag-nət }

**compound modulation** See multiple modulation. { 'käm,paünd ,mäj-ə'lā-shən }

**compound motor** [ELEC] A direct-current motor with two separate field windings, one connected in parallel with the armature circuit, the other

Cable in which conductors or types are combined. (COMPUT SCI) A circuit used simultaneously for communication and telegraph discriminating network. (ELEC) Two types of signals.

[COMMUN] The analog signal plus all blanking pulses. Also known as composite signal. (COMPUT SCI) The signalization signals necessary for an analog color television. A filter constructed of different kinds in series.

See composite color signal. A pulse composed of pulses received from several paths in a pulse assembly of apparatus. End of a composite.

[COMMUN] The video color television signal which has red, green, and blue components.

[ELEC] A combination of high-pass, band-pass, and low-pass filters.

carbon resistor.

A cryostat consisting of different electrical components.

[COMPUT SCI] A document containing different data structures and sound.

A winding component that acts either as an inductor or a capacitor.

A direct-current field winding on the main shaft of a motor.

Permanent magnet of thin cross-section.

Low-level modulation.

A direct-current motor connected to a circuit, the other end connected to ground.

connected in series with the armature circuit. (COMPUT SCI) A single program instruction that contains two or more instructions which could stand alone.

[COMPUT SCI] A single program instruction that contains two or more instructions which could stand alone.

[ELEC] A winding that is a combination of series and shunt winding.

[ENG. ACOUS] A loudspeaker having an electrically actuated valve that modulates a stream of compressed air.

See packed file. (COMPUT SCI) See data compression.

[ELECTR] 1. Reduction of the effective gain of a device at one level of signal, so that weak signal components will not be lost in background and strong signals will not overload the system. 2. See compression ratio.

See pressure cable.

[ELECTR] The ratio of the gain of a device at a low power level to the gain at some higher level, usually expressed in decibels. Also known as compression.

[ELECTR] An electromagnetic surveillance receiver that instantaneously analyzes and sorts all signals within a broad radio-frequency spectrum by using pulse compression techniques which perform a complete analysis up to 10,000 times faster than a superheterodyne receiver or spectrum analyzer.

[COMPUT SCI] A routine or program that reduces the number of binary digits needed to represent data or information. (ELECTR) The part of a compandor that is used to compress the intensity range of signals at the transmitting or recording end of a circuit.

[ELEC] 1. Network employed in conjunction with a hybrid coil to balance a subscriber's loop; adjusted for an average loop length or an average subscriber's set, or both, to secure compromise (not precision) isolation between the two directional paths of the hybrid. 2. Hybrid balancing network which is designed to balance the average of the impedances that may be connected to the switchboard side of a hybrid arrangement of a repeater.

[COMMUN] Unintentional data-related or intelligence-bearing signals which, if intercepted and analyzed by any technique, could disclose the classified information transmitted, received, handled, or otherwise processed by equipments.

See computer numerical control.

See CPU-bound program.

[COMPUT SCI] A control procedure in FORTRAN which allows the transfer of control to the *i*th label of a set of *n* labels used as statement numbers in the program.

[CONT SYS] A control system designed to follow a path calculated to be the optimal one to achieve a desired result.

[COMPUT SCI] The operation of an analog computer in which input signals are used by the computing units to calculate a solution, in contrast to hold mode and reset mode.

[COMPUT SCI] A device that receives, processes, and presents data; the two types are analog and digital. Also known as computing machine.

[CONT SYS] The use of computers in converting the initial idea for a product into a detailed engineering design. Computer models and graphics replace the sketches and engineering drawings traditionally used to visualize products and communicate design information. Abbreviated CAD.

[COMPUT SCI] The carrying out of computer-aided design with a system that has additional features for the drafting function, such as dimensioning and text entry. Abbreviated CADD.

[ENG] The use of computer-based tools to assist in solution of engineering problems.

See computer-assisted instruction.

See computer-managed instruction.

[CONT SYS] The use of computers in converting engineering designs into finished products. Computers assist managers, manufacturing engineers, and production workers by automating many production tasks, such as developing process plans, ordering and tracking materials, and monitoring production schedules, as well as controlling the machines, industrial robots, test equipment, and systems that move and store materials in the factory. Abbreviated CAM.

[COMPUT SCI] The use of software packages to assist in all phases of the development of an information system, including analysis, design, and programming. Abbreviated CASE.

See symbolic system.

[COMPUT SCI] A person who defines a problem, determines exactly what is required in the solution, and defines the

## computer animation

outlines of the machine solution; generally, an expert in automatic data processing applications. (kəm'pyüd-ər 'an-ə,li:st)

**computer animation** [COMPUT SCI] The use of a computer to present, either continuously or in rapid succession, pictures on a cathode-ray tube or other device, graphically representing a time developing system at successive times. (kəm'pyüd-ər an-ə'mā-shən)

**computer architecture** [COMPUT SCI] The art and science of assembling logical elements to form a computing device. (kəm'pyüd-ər 'är-ko ,tek-chər)

**computer-assisted instruction** [COMPUT SCI] The use of computers to present drills, practice exercises, and tutorial sequences to the student, and sometimes to engage the student in a dialog about the substance of the instruction. Abbreviated CAI. Also known as computer-aided instruction, computer-assisted learning. (kəm'pyüd-ər ə'sis-təd in 'strək-shən)

**computer-assisted learning** See computer-assisted instruction. (kəm'pyüd-ər ə'sis-təd 'lɔ:n-ɪŋ)

**computer-assisted retrieval** [COMPUT SCI] The use of a computer to locate documents or records stored outside of the computer, on paper or microfilm. Abbreviated CAR. (kəm'pyüd-ər ə'sis-təd rɪ'trɪ-vəl)

**computer center** See electronic data-processing center. (kəm'pyüd-ər ,sen-tər)

**computer code** [COMPUT SCI] The code representing the operations built into the hardware of a particular computer. (kəm'pyüd-ər ,kɒd)

**computer conferencing** See computer networking. (kəm'pyüd-ər 'kɒn-frəns-ɪŋ)

**computer control** [CONT SYS] Process control in which the process variables are fed into a computer and the output of the computer is used to control the process. (kəm'pyüd-ər kən'trɒl)

**computer control counter** [COMPUT SCI] Counter which stores the next required address; any counter which furnishes information to the control unit. (kəm'pyüd-ər kən'trɒl ,kaunt-ər)

**computer-controlled system** [CONT SYS] A feedback control system in which a computer operates on both the input signal and the feedback signal to effect control. (kəm'pyüd-ər kən'trɒld ,sɪs-təm)

**computer control register** See program register. (kəm'pyüd-ər kən'trɒl rej-ə-stər)

**computer efficiency** [COMPUT SCI] 1. The ratio of actual operating time to scheduled operating time of a computer. 2. In time-sharing, the ratio of user time to the sum of user time plus system time. (kəm'pyüd-ər ɪ'fɪʃ-ən-si)

**computer graphics** [COMPUT SCI] The process of pictorial communication between humans and computers, in which the computer input and output have the form of charts, drawings, or appropriate pictorial representation; such devices as cathode-ray tubes, mechanical plotting boards, curve tracers, coordinate digitizers, and light pens are employed. (kəm'pyüd-ər 'graf-iks)

**computer graphics interface** [COMPUT SCI] A standard format for writing graphics drivers. Abbreviated CGI. (kəm'pyüd-ər 'graf-iks 'ɪn-tər ,fi:s)

**computer graphics metafile** [COMPUT SCI] A standard device-independent graphics format that is used to transfer graphics images between computer programs and storage devices. Abbreviated CGM. (kəm'pyüd-ər 'graf-iks 'med-ə,fi:l)

**computer input from microfilm** [COMPUT SCI] The technique of reading images on microfilm and transforming them into a form which is understandable to a computer. Abbreviated CIM. (kəm'pyüd-ər 'ɪn,pʊt frəm 'mɪ-krə,fi:lm)

**computer-integrated manufacturing** [ENG] A computer-automated system in which individual engineering, production, marketing, and support functions of a manufacturing enterprise are organized; functional areas such as design, analysis, planning, purchasing, cost accounting, inventory control, and distribution are linked through the computer with factory floor functions such as materials handling and management, providing direct control and monitoring of all process operations. Abbreviated CIM. (kəm'pyüd-ər 'ɪnt-ə,grəd-əd ,mæn-ə'fak-tʃər-ɪŋ)

**computerized branch exchange** [COMMUN] A computer-controlled telephone switching system that supports such services as conference calling, least-cost routing, direct inward dialing, and automatic rerouting of a busy line. Abbreviated CBX. (kəm'pyüd-ə,rɪz'd 'brʌnʃ ɪks'tʃʌŋ)

**computer-limited** [COMPUT SCI] Pertaining to a situation in which the time required for computation exceeds the time required to read inputs and write outputs. (kəm'pyüd-ər ,lɪm-əd-əd)

**computer literacy** [COMPUT SCI] Knowledge and understanding of computers and computer systems and how to apply them to the solution of problems. (kəm'pyüd-ər 'lɪt-ə-rəsi)

**computer-managed instruction** [COMPUT SCI] The use of computer assistance in testing, diagnosing, prescribing, grading, and record keeping. Abbreviated CMI. Also known as computer-aided management of instruction. (kəm'pyüd-ər 'mæn-ɪd ɪn'strək-shən)

**computer memory** See memory. (kəm'pyüd-ər 'mem-rɪ)

**computer modeling** [COMPUT SCI] The use of a computer to develop a mathematical model of a complex system or process and to provide conditions for testing it. (kəm'pyüd-ər 'mɒd-əl-ɪŋ)

**computer network** [COMPUT SCI] A system of two or more computers that are interconnected by communication channels. Also known as network. (kəm'pyüd-ər 'net,wɜ:k)

**computer networking** [COMMUN] The use of a network of computers and computer terminals by individuals at various locations to interact with each other by entering data into the computer system. Also known as computer conferencing. (kəm'pyüd-ər 'net,wɜ:k-ɪŋ)



[COMPUT SCI] A graphics drivers, or |graf-iks 'in-tar

[COMPUT SCI] A graphics format images between devices. Abbreviated |med-a,fil |n [COMPUT SCI] es on microfilm a form which is Abbreviated CIM, rə,fil |

**acturing** [ENG] tem in which tion, marketing, i manufacturing lonal areas such purchasing, cost, and distribution, ter with factory terials handling direct control ess operations. l-ər |nt-ə,grəd-əd

**ge** [COMMUN] A e switching syste as conference ct inward dialing, usy line. Abbreviated |ks'chānj | | Pertaining to a equired for com- equired to read kəm'pyüd-ər, |im-

| Knowledge and nd computer sys- o: the solution of 'ə-sē }

**n** [COMPUT SCI] e in testing, diag- d record keeping s computer-aided | kəm'pyüd-ər

ry. | kəm'pyüd-

[COMPUT SCI] The use of a atical model of s and to provide om'pyüd-ər 'mäd-

| A system of two nterconnected by o: known as net- k }

[UN] The use of a- puter terminals by is to interact with nto the computer uter conferencing.

**computer numerical control** [CONT SYS] A control system in which numerical values corresponding to desired tool or control positions are generated by a computer. Abbreviated CNC. Also known as computational numerical control; soft-wired numerical control; stored-program numerical control. | kəm'pyüd-ər nü'mer-i-kəl kən'trəl |

**computer operation** [COMPUT SCI] The electronic action that is required in a computer to give a desired computation. | kəm'pyüd-ər əp-ə'rā-shən |

**computer-oriented language** [COMPUT SCI] A low-level programming language developed for use on a particular computer or line of computers produced by a specific manufacturer. Also known as machine-oriented language. | kəm'pyüd-ər |ōr-ē,ent-əd 'lāŋ-gwɪ | |

**computer output on microfilm** [COMPUT SCI] The generation of microfilm which displays information developed by a computer. Abbreviated COM. | kəm'pyüd-ər 'aút,pút ɒn 'mī-kro,fil |m |

**computer part programming** [CONT SYS] The use of computers to program numerical control systems. | kəm'pyüd-ər 'pärt 'prō,gram-ɪŋ |

**computer performance evaluation** [COMPUT SCI] The measurement and evaluation of the performance of a computer system, aimed at ensuring that a minimum amount of effort, expense, and waste is incurred in the production of data-processing services, and encompassing such tools as canned programs, source program optimizers, software monitors, hardware monitors, simulation, and bench-mark problems. Abbreviated CPE. | kəm'pyüd-ər pər'fɔrməns | val-yə'wā-shən |

**computer programming** See programming. | kəm'pyüd-ər 'prō,gram-ɪŋ |

**computer science** [COMPUT SCI] The study of computers and computing, including computer hardware, software, programming, networking, database systems, information technology, interactive systems, and security. | kəm'pyüd-ər 'si-əns |

**computer security** [COMPUT SCI] Measures taken to protect computers and their contents from unauthorized use. | kəm'pyüd-ər sə'kyūr-əd-ē |

**computer storage device** See storage device. | kəm'pyüd-ər 'stōr-ɪj dɪ'vɪs |

**computer system** [COMPUT SCI] 1. A set of related but unconnected components (hardware) of a computer or data-processing system. 2. A set of hardware parts that are related and connected, and thus form a computer. | kəm'pyüd-ər 'sɪs-təm |

**computer systems architecture** [COMPUT SCI] The discipline that defines the conceptual structure and functional behavior of a computer system, determining the overall organization, the attributes of the component parts, and how these parts are combined. | kəm'pyüd-ər 'sɪs-təmz 'ar-kə,tek-tʃər |

**computer theory** [COMPUT SCI] A discipline covering the study of circuitry, logic, micro-

programming, compilers, programming languages, file structures, and system architectures. | kəm'pyüd-ər, 'θē-ə-rē |

**computer utility** [COMPUT SCI] A computer that provides service on a time-sharing basis, generally over telephone lines, to subscribers who have appropriate terminals. | kəm'pyüd-ər yū'til-əd-ē |

**computer vision** [COMPUT SCI] The use of digital computer techniques to extract, characterize, and interpret information in visual images of a three-dimensional world. Also known as machine vision. | kəm'pyüd-ər 'vɪzh-ən |

**computer word** See word. | kəm'pyüd-ər, wɔrd |

**computing machine** See computer. | kəm 'pyüd-ɪŋ mə'shēn |

**computing power** [COMPUT SCI] The number of operations that a computer can carry out in 1 second. | kəm'pyüd-ɪŋ, paʊ-ər |

**computing unit** [COMPUT SCI] The section of a computer that carries out arithmetic, logical, and decision-making operations. | kəm'pyüd-ɪŋ, yū-nət |

**concatenate** [COMPUT SCI] To unite in a sequence, link together, or link to a chain. | kən'kat-ən,ət |

**concatenation** [COMPUT SCI] 1. An operation in which a number of conceptually related components are linked together to form a larger, organizationally similar entity. 2. In string processing, the synthesis of longer character strings from shorter ones. [ELEC] A method of speed control of induction motors in which the rotors of two wound-rotor motors are mechanically coupled together and the stator of the second motor is supplied with power from the rotor slip rings of the first motor. [ENG ACOUS] The linking together of phonemes to produce meaningful sounds. | kən, kat-ən'ā-shən |

**concentrator** [ELECTR] Buffer switch (analog or digital) which reduces the number of trunks required. | 'kän-sən, trəd-ər |

**concentric cable** See coaxial cable. | kən'sen-trɪk 'kā-bəl |

**concentric line** See coaxial cable. | kən'sen-trɪk 'lɪn |

**concentric slip ring** [ELEC] A large slip-ring assembly consisting of concentrically arranged insulators and conducting materials. | kən'sen-trɪk 'slɪp, rɪŋ |

**concentric transmission line** See coaxial cable. | kən'sen-trɪk tranz'mɪʃ-ən, lɪn |

**concentric windings** [ELEC] Transformer windings in which the low-voltage winding is in the form of a cylinder next to the core, and the high-voltage winding, also cylindrical, surrounds the low-voltage winding. | kən'sen-trɪk 'wɪnd-ɪŋz |

**conceptual modeling** [COMPUT SCI] Writing a program by means of which a given result will be obtained, although the result is incapable of proof. Also known as heuristic programming. | kən'sep-tʃə-wəl 'mäd-ɪŋ |

**conceptual schema** [COMPUT SCI] The logical structure of an entire data base. | kən'sep-tʃə-wəl 'skē-mə |

## concurrency

- concurrency** [COMPUT SCI] Referring to two or more tasks of a computer system which are in progress simultaneously. { kən'kər-ən-sē }
- concurrent input/output** [COMPUT SCI] The simultaneous reading from and writing on different media by a computer. { kən'kər-ənt 'in,pūt 'aüt ,pūt }
- concurrent operations control** [COMPUT SCI] The supervisory capability required by a computer to handle more than one program at a time. { kən'kər-ənt əp-ə'rā-shənz kən'trəl }
- concurrent processing** [COMPUT SCI] The conceptually simultaneous execution of more than one sequential program on a computer or network of computers. { kən'kər-ənt 'präs,əs-ig }
- concurrent real-time processing** [COMPUT SCI] The capability of a computer to process simultaneously several programs, each of which requires responses within a time span related to its particular time frame. { kən'kər-ənt 'rēl ,tīm ,präs,əs-ig }
- condensation** [ELEC] An increase of electric charge on a capacitor conductor. { kən-dən 'sā-shən }
- condenser** See capacitor. { kən'den-sər }
- condenser antenna** See capacitor antenna. { kən'den-sər an'ten-ə }
- condenser box** See capacitor box. { kən'den-sər 'bāks }
- condenser bushing** [ELEC] An insulation made up of alternate layers of insulating material and metal foil placed between the conductor and outer casing in terminals of transformers and other high-voltage equipment such as switchgears. { kən'den-sər ,būsh-ig }
- condenser microphone** See capacitor microphone. { kən'den-sər 'mī-krō,fōn }
- condenser transducer** See electrostatic transducer. { kən'den-sər ,tranz'dü-sər }
- condensing electrometer** See capacitive electrometer. { kən'dens-ig ə,lek'trām-əd-ər }
- conditional** [COMPUT SCI] Subject to the result of a comparison made during computation in a computer, or subject to human intervention. { kən'dish-ən-əl }
- conditional assembly** [COMPUT SCI] A feature of some assemblers which suppresses certain sections of code if stated program conditions are not met at assembly time. { kən'dish-ən-əl ə'sem-blē }
- conditional branch** See conditional jump. { kən'dish-ən-əl 'brānch }
- conditional breakpoint** [COMPUT SCI] A conditional jump that, if a specified switch is set, will cause a computer to stop; the routine may then be continued as coded or a jump may be forced. { kən'dish-ən-əl 'brāk,pōint }
- conditional expression** [COMPUT SCI] A COBOL language expression which is either true or false, depending upon the status of the variables within the expression. { kən'dish-ən-əl ik'spresh-ən }
- conditional jump** [COMPUT SCI] A computer instruction that will cause the proper one of two

- or more addresses to be used in obtaining the next instruction, depending on some property of a numerical expression that may be the result of some previous instruction. Also known as conditional branch, conditional transfer, decision instruction, discrimination; IF statement. { kən'dish-ən-əl 'jəmp }
- conditionally stable circuit** [ELECTR] A circuit which is stable for certain values of input signal and gain, and unstable for other values. { kən'dish-ən-əl-ē ;stā-bəl ,sər-kət }
- conditional replenishment** [COMMUN] A form of differential pulse-code modulation in which the only information transmitted consists of addresses specifying the locations of picture samples in the moving area, and information by which the intensities of moving area picture samples can be reconstructed at the receiver. { kən'dish-ən-əl ri'plen-ish-mənt }
- conditional statement** [COMPUT SCI] A statement in a computer program that is executed only when a certain condition is satisfied. { kən'dish-ən-əl 'stāt-mənt }
- conditional transfer** See conditional jump. { kən'dish-ən-əl 'tranz-fər }
- condition code** [COMPUT SCI] Portion of a program status word indicating the outcome of the most recently executed arithmetic or boolean operation. { kən'dish-ən ,kōd }
- conditioned line** [COMPUT SCI] A communications channel, usually a telephone line, that has been adapted for data transmission. { kən'dish-ənd 'līn }
- conditioned stop instruction** [COMPUT SCI] A computer instruction which causes the execution of a program to stop if some given condition exists, such as the specific setting of a switch on a computer console. { kən'dish-ənd 'stāp in'strek-shən }
- condition entries** [COMPUT SCI] The upper-right-hand portion of a decision table, indicating, for each of the conditions, whether the condition satisfies various criteria listed in the condition stub, or the values of various parameters listed in the condition stub. { kən'dish-ən ,en,trez }
- conditioning** [ELECTR] Equipment modifications or adjustments necessary to match transmission levels and impedances or to provide equalization between facilities. { kən'dish-ən-ig }
- condition portion** [COMPUT SCI] The upper portion of a decision table, comprising the condition stub and condition entries. { kən'dish-ən ,pōr-shən }
- condition stub** [COMPUT SCI] The upper-left-hand portion of a decision table, consisting of a single column listing various criteria or parameters which are used to specify the conditions. { kən'dish-ən ,stāb }
- conductance** [ELEC] The real part of the admittance of a circuit; when the impedance contains no reactance, as in a direct-current circuit, it is the reciprocal of resistance, and is thus a measure of the ability of the circuit to conduct electricity. Also known as electrical conductance. Designated G. { kən'dak-təns }

used in obtaining the  
; on some property of  
tion. Also known as  
ditional transfer; decla-  
ation; IF statement.

Y [ELECTR] A circuit  
in values of input  
ble for other values.  
or-kat

[COMMUN] A form of  
odulation in which  
mitted consists of  
ocations of picture  
ea, and information  
moving area picture  
ted at the receiver.  
iont

PUT SCI] A statement  
; executed only when  
id. {kən'dish-ən-ə}

conditional jump.

1) Portion of a pro-  
the outcome of the  
:hmetic or boolean  
5d

SCI] A communica-  
phone line, that  
ata transmission.

n [COMPUT SCI] A  
auses the execution  
ne given condition  
setting of a switch  
kən'dish-ən-d 'stəp

1) The upper-right-  
ible, indicating, for  
ther the condition  
d in the condition  
; parameters listed  
dish-ən ,en,trez }  
nent modifications  
atch transmission  
ovide equalization  
n-ən-ig }

2) The upper por-  
ising the condition  
{ kən'dish-ən ,pör

re upper-left-hand  
. consisting of a  
riteria or param-  
fy the conditions.

part of the admit-  
pedance contains  
current circuit, it  
e, and is thus a  
ircuit to conduct  
ical conductance.  
)

**conductance-variation method** [ELEC] A tech-  
nique for measuring low admittances; measure-  
ments in a parallel-resonance circuit with the  
terminals open-circuited, and then with the unknown  
admittance replaced by a known conductance  
standard are made; from them the unknown  
can be calculated. { kən'dak-təns ver-ē'ā-shən  
,meth-əd }

**conducted interference** [COMMUN] Interfering  
signals arriving by direct coupling such as on  
communications and power lines. { kən'dak-  
təd ,in-tər'fir-əns }

**conduction** [ELEC] The passage of electric  
charge, which can occur by a variety of processes,  
such as the passage of electrons or ionized  
atoms. Also known as electrical conduction.  
{ kən'dak-shən }

**conduction cooling** [ELECTR] Cooling of elec-  
tronic components by carrying heat from the  
device through a thermally conducting material  
to a large piece of metal with cooling fins.  
{ kən'dak-shən ,kü-l-ig }

**conductive coupling** [ELEC] Electric connection  
of two electric circuits by their sharing the same  
resistor. { kən'dak-tiv 'kəp-l-ig }

**conductive gasket** [ELEC] A flexible metallic gas-  
ket used to reduce radio-frequency leakage at  
joints in shielding. { kən'dak-tiv 'gas-kət }

**conductive interference** [ELECTR] Interference to  
electronic equipment that originates in power  
lines supplying the equipment, and is conducted  
to the equipment and coupled through the power  
supply transformer. { kən'dak-tiv ,in-tər'fir-əns }

**conductivity** [ELEC] The ratio of the electric cur-  
rent density to the electric field in a material.  
Also known as electrical conductivity; specific  
conductance. { ,kən,dək'tiv-əd-ē }

**conductivity bridge** [ELEC] A modified Kelvin  
bridge for measuring very low resistances.  
{ ,kən,dək'tiv-əd-ē ,br-ij }

**conductivity cell** [ELEC] A glass vessel with two  
electrodes at a definite distance apart and filled  
with a solution whose conductivity is to be  
measured. { ,kən,dək'tiv-əd-ē ,sel }

**conductivity ellipsoid** [ELEC] For an anisotropic  
material, an ellipsoid whose axes are the eigen-  
vectors of the conductivity tensor. { ,kən,dək  
'tiv-əd-ē 'il-p-soid }

**conductivity modulation** [ELECTR] Of a semicon-  
ductor, the variation of the conductivity of a semi-  
conductor through variation of the charge carrier  
density. { ,kən,dək'tiv-əd-ē ,mäj-ə'lā-shən }

**conductivity modulation transistor** [ELECTR]  
Transistor in which the active properties are  
derived from minority carrier modulation of the  
bulk resistivity of the semiconductor. { ,kən  
'dak'tiv-əd-ē ,mäj-ə'lā-shən tran'z-is-tər }

**conductivity tensor** [ELEC] A tensor which, when  
multiplied by the electric field vector according  
to the rules of matrix multiplication, gives  
the current density vector. { ,kən,dək'tiv-əd-ē  
,ten-sər }

**conductor** [ELEC] A wire, cable, or other body  
or medium that is suitable for carrying elec-

tric current. Also known as electric conductor.  
{ kən'dək-tər }

**conductor skin effect** See skin effect. { kən  
'dək-tər ,skin i'fekt }

**conduit** [ELEC] Solid or flexible metal or other  
tubing through which insulated electric wires are  
run. { 'kän-də-wət }

**cone** [ENG ACOUS] The cone-shaped paper or fiber  
diaphragm of a loudspeaker. { kōn }

**cone antenna** See conical antenna. { 'kōn  
an'ten-ə }

**cone loudspeaker** [ENG ACOUS] A loudspeaker  
employing a magnetic driving unit that is me-  
chanically coupled to a paper or fiber cone. Also  
known as cone speaker. { 'kōn 'laüd ,spēk-ər }

**cone speaker** See cone loudspeaker. { 'kōn  
,spēk-ər }

**conference communications** [COMMUN] Com-  
munications facilities whereby direct speech  
conversation may be conducted between three  
or more locations simultaneously. { kən'frəns  
kəmyü-nə'kā-shənz }

**configuration** [COMPUT SCI] For a computer sys-  
tem, the relationship of hardware elements to  
each other, and the manner in which they are  
electronically connected. [SYS ENG] A group of  
machines interconnected and programmed to  
operate as a system. { kən'fig-yə'rā-shən }

**confirmation message** [COMPUT SCI] A message  
that appears on a computer screen asking  
the user to confirm an action that could  
have destructive effects, such as loss of data.  
{ ,kən-fər'mā-shən ,mes-ij }

**conformable optical mask** [ELECTR] An optical  
mask made on a flexible glass substrate so that it  
can be pulled down under vacuum into intimate  
contact with the substrate for accurate circuit  
fabrication. { kən'fər-mə-bəl 'äp-tə-kəl 'mask }

**conformal array** [ELECTR] An array-type antenna  
in which the radiating elements are mounted  
on a surface shaped for other purposes, such  
as aerodynamics, or on a surface more  
convenient of beneficial than a plane. Circular or  
cylindrical arrays provide an antenna-pattern  
consistency particularly valuable in TACAN, IFF,  
and secondary radar applications. { kən'fər-məl  
'ə'rā }

**confusion jamming** [ELECTR] An electronic coun-  
termeasure technique in which the signal from an  
enemy tracking radar is amplified and retransmit-  
ted with distortion to create a false echo that  
affects accuracy of target range, azimuth, and  
velocity data. { kən'fyü-zhən ,jam-ig }

**confusion matrix** [COMPUT SCI] In pattern recog-  
nition, a matrix used to represent errors in  
assigning classes to observed patterns in which  
the *ij*th element represents the number of sam-  
ples from class *i* which were classified as class *j*.  
{ kən'fyü-zhən ,mä-triks }

**congruential generator** [COMPUT SCI] A method  
of generating a sequence of random numbers  $x_0,$   
 $x_1, x_2, \dots$  in which each member is generated  
from the previous one by the formula  $x_{i+1} \equiv$   
 $ax_i + b$  modulus  $m$ , where  $a, b,$  and  $m$  are  
constants. { ,kən,grü-en-chəl 'jen-ə,rād-ər }

## conical antenna

**conical antenna** [ELECTROMAG] A wide-band antenna in which the driven element is conical in shape. Also known as cone antenna. { 'kän-ə-kəl an'ten-ə }

**conical beam** [ELECTR] The radar beam produced by conical scanning methods. { 'kän-ə-kəl 'bēm }

**conical-horn antenna** [ELECTROMAG] A horn antenna having a circular cross section and straight sides. { 'kän-ə-kəl ,hörn an'ten-ə }

**conical monopole antenna** [ELECTROMAG] A variation of a biconical antenna in which the lower cone is replaced by a ground plane and the upper cone is usually bent inward at the top. { 'kän-ə-kəl 'män-ə,pōl an'ten-ə }

**conical scanning** [ELECTR] Scanning in radar in which the direction of maximum radiation generates a cone, the vertex angle of which is of the order of the beam width; may be either rotating or nutating, according to whether the direction of polarization rotates or remains unchanged. Done to effect accurate angle measurement in precision tracking radars. { 'kän-ə-kəl 'skan-ɪŋ }

**conjugate branches** [ELEC] Any two branches of an electrical network such that a change in the electromotive force in either does not result in a change in current in the other. Also known as conjugate conductors. { 'kän-jə-gət 'branz }  
**conjugate bridge** [ELECTR] A bridge in which the detector circuit and the supply circuits are interchanged, as compared with a normal bridge of the given type. { 'kän-jə-gət 'brɪdʒ }

**conjugate conductors** See conjugate branches. { 'kän-jə-gət kən'dak-tərz }

**conjugate impedances** [ELEC] Impedances having resistance components that are equal, and reactance components that are equal in magnitude but opposite in sign. { 'kän-jə-gət im'pēd-ən-səz }

**conjunctive search** [COMPUT SCI] A search to identify items having all of a certain set of characteristics. { kən'jŋk-tɪv 'səʃtʃ }

**connected load** [ELEC] The sum of the continuous power ratings of all load-consuming apparatus connected to an electric power distribution system or any part thereof. { kə'nek-təd 'lōd }

**connect function** [COMPUT SCI] A signal sent over a data line to a selected peripheral device to connect it with the central processing unit. { kə'nekt ,fŋk-shən }

**connecting circuit** [ELECTR] A functional switching circuit which directly couples other functional circuit units to each other to exchange information as dictated by the momentary needs of the switching system. { kə'nekt-ɪŋ ,sər-kət }

**connectionless transmission** [COMMUN] Data transmission by packets that include addresses of the source and destination, so that a direct connection between these nodes is unnecessary. { kə'nek-shən-ləs tranz'mɪʃ-ən }

**connection-oriented transmission** [COMMUN] Data transmission in which a physical path between the source and destination must be established and maintained for the duration of

the transmission. { kə'nek-shən ,ɔr-ē,ent-əd tranz'mɪʃ-ən }

**connector** [COMPUT SCI] In database management, a pointer or link between two data structures. [ELECTR] A switch, or relay group system in old electromechanical central offices, which found the telephone line being called as a result of digits being dialed; it also caused interrupted ringing voltage to be placed on the called line or returned a busy tone to the calling party if the line were busy. [ENG] 1. A detachable device for connecting electrical conductors. 2. A symbol on a flowchart indicating that the flow jumps to a different location on the chart. { kə'nek-tər }

**connector block** [ELECTR] A device for connecting two cables without using plugs, similar to a barrier strip but larger, in which wires from one cable are attached to lugs of screws on one side, and wires from the other cable are fastened to corresponding points on the opposite side. { kə'nek-tər ,blɒk }

**connect time** [COMPUT SCI] The time that a user at a terminal is signed on to a computer. { kə'nekt ,tɪm }

**conode** See tie line. { 'kō,nōd }

**consequence finding program** [COMPUT SCI] A computer program that attempts to deduce mathematical consequences from a set of axioms and to select those consequences that will be significant. { 'kän-sə-kwəns ,fɪnd-ɪŋ ,prō-gram }

**conservation of charge** [ELEC] A law which states that the total charge of an isolated system is constant; no violation of this law has been discovered. Also known as charge conservation. { ,kän-sər'vā-shən əv 'tʃɑːrʒ }

**consistency routine** [COMPUT SCI] A debugging routine which is used to determine whether the program being checked gives consistent results at specified check points; for example, consistent between runs or with values calculated by other means. { kən'sɪs-tən-sē rūtɪn }

**console** [COMPUT SCI] 1. The section of a computer that is used to control the machine manually, correct errors, manually revise the contents of storage, and provide communication in other ways between the operator or service engineer and the central processing unit. Also known as master console. 2. A display terminal together with its keyboard. [ENG] 1. A main control desk for electronic equipment, as at a radar station, radio or television station, or airport control tower. Also known as control desk.

2. A large cabinet for a radio or television receiver, standing on the floor rather than on a table.

3. A grouping of controls, indicators, and similar items contained in a specially designed model cabinet for floor mounting; constitutes an operator's permanent working position. { 'kän,sōl }

**console display** [COMPUT SCI] The visible representation of information, whether in words, numbers, or drawings, on a console screen connected to a computer. { 'kän,sōl dɪ'splə }

**console file adapter** [COMPUT SCI] A special input/output device which allows the operator to

ihon ,ör-ē,ent'ad

tabase manage-  
tween two data  
or relay group  
al central offices,  
e being called as  
l, it also caused  
o be placed on  
usy tone to the  
usy [ENG] 1. A  
ng electrical con-  
hchart indicating  
it location on the

vice for connect-  
plugs, similar to  
hich wires from  
of screws on one  
able are fastened  
e opposite side.

ime that a user at  
puter. {kə'nekt}

[COMPUT SCI] A  
npts to deduce  
ma set of axioms  
ices that will be  
rd-ig ,prō-grəm ]  
:] A law which  
isolated system  
is law has been  
ge conservation.

ct] A debugging  
ine whether the  
nsistent results  
mple, consistent  
culated by other  
]

ction of a com-  
l the machine  
ally revise the  
communication  
rator or service  
ssing unit. Also  
display terminal  
[ENG] 1. A main  
uipment, as at  
sion station, or  
as control desk.  
vision receiver,  
an on a table-  
ors, and similar  
esigned model  
stitutes an ope-  
on. { 'kän,söl }  
he visible rep-  
ther in words,  
console screen  
n,söl di'splä ]  
:] A special in-  
the operator to

load reloadable control storage from the system console. { 'kän,söl 'fil ə'dap-tər }

**console receiver** [ELECTR] A television or radio receiver in a console. { 'kän,söl ri'sev-ər }

**console switch** [COMPUT SCI] A switch on a computer console whose setting can be sensed by a computer, so that an instruction in the program can direct the computer to use this setting to determine which of various alternative courses of action should be followed. { 'kän,söl 'swich }

**constancy** See persistence. { 'kän-stən-sē }

**constant-amplitude recording** [ENG ACOUS] A sound-recording method in which all frequencies having the same intensity are recorded at the same amplitude. { 'kän-stənt 'am-plä,tüd ri ,körd-ig }

**constant area** [COMPUT SCI] A part of storage used for constants. { 'kän-stənt 'er-ē-ə }

**constant bit rate** [COMMUN] A mode of operation in a digital system where the bit rate is constant from start to finish of the compressed bit stream. { 'kän-stənt 'bit ,rät }

**constant-conductance network** See constant-resistance network. { 'kän-stənt kən'dak-təns ,net,work }

**constant-current characteristic** [ELECTR] The relation between the voltages of two electrodes in an electron tube when the current to one of them is maintained constant and all other electrode voltages are constant. { 'kän-stənt 'kar-ənt ,kar-ik-tə'ris-tik }

**constant-current dc potentiometer** [ELEC] A potentiometer in which the unknown electromotive force is balanced by a constant current times the resistance of a calibrated resistor or slide-wire. Also known as Poggendorff's first method. { 'kän-stənt 'kar-ənt 'dē'sē pə'ten-che'əm-əd-ər }

**constant-current filter** [ELECTR] A filter network intended to be connected to a source whose internal impedance is so high it can be assumed as infinite. { 'kän-stənt 'kar-ənt 'fil-tər }

**constant-current generator** [ELECTR] A vacuum-tube circuit, generally containing a pentode, in which the alternating-current anode resistance is so high that anode current remains essentially constant despite variations in load resistance. { 'kän-stənt 'kar-ənt 'jen-ə,räd-ər }

**constant-current modulation** [COMMUN] System of amplitude modulation in which output circuits of the signal amplifier and the carrier-wave generator or amplifier are connected via a common coil to a constant-current source. Also known as Heising modulation. { 'kän-stənt 'kar-ənt ,mäj-ə'lā-shən }

**constant-current source** [ELECTR] A circuit which produces a specified current, independent of the load resistance or applied voltage. { 'kän-stənt 'kar-ənt ,sörs }

**constant-current supply** [ELEC] The power supply for repeated submarine telephone cables; the voltage is varied automatically to maintain a constant current through the use of variable-voltage rectifiers and constant-current regulators at each shore station. { 'kän-stənt 'kar-ənt sə'plī }

**constant-current transformer** [ELEC] A transformer that automatically maintains a constant current in its secondary circuit under varying loads, when supplied from a constant-voltage source. { 'kän-stənt 'kar-ənt tranz'förm-ər }

**constant-distance sphere** [ENG ACOUS] The relative response of a sonar projector to variations in acoustic intensity, or intensity per unit band, over the surface of a sphere concentric with its center. { 'kän-stənt 'dis-təns ,sfir }

**constant-false-alarm rate** [ELECTR] Radar system devices used to prevent receiver saturation and overload so as to present clean video information to the display, and to present a constant noise level to an automatic detector. { 'kän-stənt ,föls ə'lärm ,rät }

**constant-false-alarm-rate detection** [ELECTR] Radar detection in which the sensitivity threshold is adjusted to adapt to a changing and uncertain background of clutter or interference. { 'kän-stənt föls ə'lärm rät di'tek-shən }

**constant instruction** [COMPUT SCI] A nonexecutable instruction. { 'kän-stənt in'strək-shən }

**constant-k filter** [ELECTR] A filter in which the product of the series and shunt impedances is a constant that is independent of frequency. { 'kän-stənt 'kä 'fil-tər }

**constant-k network** [ELECTR] A ladder network in which the product of the series and shunt impedances is independent of frequency within the operating frequency range. { 'kän-stənt 'kä 'net,work }

**constant-luminance transmission** [COMMUN] Type of transmission in which the transmission primaries are a luminance primary and two chrominance primaries. { 'kän-stənt 'lü-mə-nəns tranz'mish-ən }

**constant radlo code** [COMMUN] Code in which all characters are represented by combinations having a fixed ratio of ones to zeros. { 'kän-stənt 'räd-ē-ō ,kōd }

**constant-resistance dc potentiometer** [ELEC] A potentiometer in which the ratio of an unknown and a known potential are set equal to the ratio of two known constant resistances. Also known as Poggendorff's second method. { 'kän-stənt ri'zis-təns 'dē'sē pə'ten-che'əm-əd-ər }

**constant-resistance network** [ELECTR] A network having at least one driving-point impedance that is a positive constant. Also known as constant-conductance network. { 'kän-stənt ri'zis-təns 'net,work }

**constant-velocity recording** [ENG ACOUS] A sound-recording method in which, for input signals of a given amplitude, the resulting recorded amplitude is inversely proportional to the frequency; the velocity of the cutting stylus is then constant for all input frequencies having that given amplitude. { 'kän-stənt və'läs-əd-ē ri ,körd-ig }

**constant-voltage generator** [ELEC] An axle generator that is equipped with a regulator which keeps voltage constant. { 'kän-stənt 'völ-tij 'jen-ə,räd-ər }

## constant-voltage transformer

**constant-voltage transformer** [ELEC] A power transformer which will supply a constant voltage to an unvarying load, even with changes in the primary voltage. { 'kän,stant 'völ-tij tranz'fór-mär }

**constraint matrix** [COMPUT SCI] The set of equations and inequalities defining the set of admissible solutions in linear programming. { 'kän'stránt ,mā-triks }

**constraint programming language** [COMPUT SCI] A programming language in which constraints (relationships that must hold among a number of variables) are directly usable as programming constructs. { 'kän'stránt 'prō,gram-ij ,laj-gwij }

**construction operator** [COMPUT SCI] The part of a data structure which is used to construct composite objects from atoms. { 'kän'strök-shən 'äp-ə,räd-ər }

**contact** [ELEC] See electric contact. [ENG] A report of a target of interest in a radar's data processing, a detection. Also known as plot. { 'kän,takt }

**contact arc** [ELEC] A spark that occurs immediately after the breaking of an electric contact carrying a current. { 'kän,takt ,ärk }

**contact block** [ELEC] A block of conducting material such as carbon, used in a relay. { 'kän,takt ,bläk }

**contact bounce** [ELEC] The uncontrolled making and breaking of contact one or more times, but not continuously, when relay contacts are moved to the closed position. { 'kän,takt ,baüns }

**contact chatter** See chatter. { 'kän,takt ,chad-ər }

**contact clip** [ELEC] The clip which the blade of a knife switch is clamped to in the closed condition. { 'kän,takt ,klip }

**contact drop** [ELEC] The voltage drop across the terminals of an electric contact. { 'kän,takt ,dröp }

**contact electricity** [ELEC] An electric charge at the surface of contact of two different materials. { 'kän,takt i,lek'tris-äd-ē }

**contact electromotive force** See contact potential difference. { 'kän,takt i,lek-trä'möd-iv 'förs }

**contact follow** [ELEC] The distance two contacts travel together after just touching. Also known as contact overtravel. { 'kän,takt ,fäl-ō }

**contact force** [ELEC] The force exerted by the moving contact of a switch or relay on a stationary contact. { 'kän,takt ,förs }

**contact head** [COMPUT SCI] A read/write head that remains in contact with the recording surface of a hard disk, rather than hovering above it. { 'kän,takt ,hed }

**contact-making meter** See instrument-type relay. { 'kän,takt ,mäk-ij ,mäd-ər }

**contact-mask read-only memory** See last-mask read-only memory. { 'kän,takt ,mask 'räd ,ön-lē 'mem-rē }

**contact microphone** [ENG ACOUS] A microphone designed to pick up mechanical vibrations directly and convert them into corresponding electric currents or voltages. { 'kän,takt 'mī-kro ,fön }

**contact modulation** [ELEC] The use of a fast-acting relay, whose contacts make and break

at a certain threshold current, to generate square waves from a sine-wave, rectified sine-wave or direct-current source. { 'kän,takt ,mäj-ə'lä-shən }

**contactor** [ELEC] A heavy-duty relay used to control electric power circuits. Also known as electric contactor. { 'kän,tak-tər }

**contactor control system** [CONT SYS] A feedback control system in which the control signal is a discontinuous function of the sensed error and may therefore assume one of a limited number of discrete values. { 'kän,tak-tər kən'tröl ,sis-təm }

**contact overtravel** See contact follow. { 'kän,takt 'ō-vər ,trav-əl }

**contact piston** [ELECTROMAG] A waveguide piston that makes contact with the walls of the waveguide. Also known as contact plunger. { 'kän,takt ,pis-tən }

**contact plunger** See contact piston. { 'kän,takt ,plön-jər }

**contact point** [ELEC] In the ignition system of an internal combustion engine, any of the stationary and movable electrically conducting metal points that open and close to complete or break an electric circuit. { 'kän,takt ,pöint }

**contact potential** See contact potential difference. { 'kän,takt pə'ten-chäl }

**contact potential difference** [ELEC] The potential difference that exists across the space between two electrically connected materials. Also known as contact electromotive force; contact potential; Volta effect. { 'kän,takt pə'ten-chäl 'dif-rəns }

**contact pressure** [ELEC] The amount of pressure holding a set of contacts together. { 'kän,takt ,prəsh-ər }

**contact protection** [ELEC] Any method for suppressing the surge which results when an inductive circuit is suddenly interrupted; the break would otherwise produce arcing at the contacts, leading to their deterioration. { 'kän,takt prə'tek-shən }

**contact rectifier** See metallic rectifier. { 'kän,takt 'rek-tä ,fī-ər }

**contact resistance** [ELEC] The resistance in ohms between the contacts of a relay, switch, or other device when the contacts are touching each other. { 'kän,takt ri'zist-əns }

**contact sparking** [ELEC] The formation of a spark or arc at the contact points when a circuit is opened while it is carrying a current. { 'kän,takt ,spärk-ij }

**contamination** [COMPUT SCI] Placement of data at incorrect locations in storage, where it generally overlays valid information or a program code and produces bizarre results. { 'kän,tam-ə'nä-shən }

**content analysis** [COMPUT SCI] A method of automatically assigning words that identify the content of information items or search requests in an information retrieval system. { 'kän,tent ə'näl-ə-səs }

**content indicator** [COMPUT SCI] Display unit that indicates the content in a computer, and the program or mode being used. { 'kän,tent ,in-dä ,käd-ər }

current, to generate sine-wave, rectified source. [ 'kən.ti.ən ]

ity relay used to control also known as electronic

CONT SYS] A feedback control signal is a sensed error and a limited number of control signals follow. [ 'kən.ti.ən ]

C] A waveguide with the walls of the is contact plunger

piston. [ 'kən.ti.ən ]

ignition system of an any of the stationary ducting metal points, complete or break an point )

[ELEC] The potential difference across the space between conductive materials. Also motive force; contact. [ 'kən.ti.ən ]

amount of pressure together. [ 'kən.ti.ən ]

any method for supplying results when interrupted, the produce arcing at the deterioration. [ 'kən.ti.ən ]

rectifier. [ 'kən.ti.ən ]

The resistance of a relay, switch, or contacts are touching each other. [ 'kən.ti.ən ]

formation of a space when a circuit is current. [ 'kən.ti.ən ]

Placement of data where it generally a program code and kon, tam-ā'nā-shān

C] A method of analysis that identifies the source or search requests system. [ 'kən.ti.ən ]

C] Display unit that computer, and the l. [ 'kən.ti.ən ]

**contention** [COMMUN] A method of operating a multiterminal communication channel in which any station may transmit if the channel is free. If the channel is in use, the queue of contention requests may be maintained in predetermined sequence. [COMPUT SCI] 1. The condition arising when two or more units attempt to transmit over a time-division-multiplex channel at the same time. 2. Competition for the same computer resources by two or more devices or programs, such as an attempt by several programs to use the same disk drive simultaneously, or by several users in a multiaccess system to use the system's resources. [ 'kən.ten.ʃən ]

**contention resolver** [COMPUT SCI] A device that enables a central processing unit, memory, or channel whose attention is being requested over several pathways to give its attention to one pathway and ignore all others. [ 'kən.ten.ʃən ]

**contents** [COMPUT SCI] The information stored at any address or in any register of a computer. [ 'kən.tens ]

**context-driven line editor** [COMPUT SCI] A line editor in which the user need not know or keep track of line numbers but can call up text by line content; the computer will then search for the indicated pattern. [ 'kən.tekst,driv-ən 'li:n,ed-ər ]

**context-free grammar** [COMPUT SCI] A grammar in which any occurrence of a metavariable may be replaced by one of its alternatives. [ 'kən.tekst,frē'gram-ər ]

**context-sensitive grammar** [COMPUT SCI] A grammar in which the rules are applicable only when a metavariable occurs in a specified context. [ 'kən.tekst,sen-səd-iv 'gram-ər ]

**context-sensitive help** [COMPUT SCI] A help screen that provides specific information about the current status or mode of a computer program or instructions for dealing with a particular error condition that has just occurred. [ 'kən.tekst,sen-səd-iv 'help ]

**context switch** [COMPUT SCI] The action of a central processing unit that suspends work on one process to work on another. [ 'kən.tekst,switʃ ]

**context switching** See task switching [ 'kən.tekst,switʃ-ŋ ]

**contextual analysis** [COMPUT SCI] A phase of natural language processing, following semantic analysis, whose purpose is to elaborate the semantic representation of what has been made explicit in the utterance with what is implicit from context. [ 'kən'tekst-ʃə-wəl ə'nal-ə-səs ]

**contextual search** [COMPUT SCI] A search for documents or records based upon the data they contain, rather than their file names or key fields. [ 'kən'tekst-ʃə-wəl 'sə:tʃ ]

**contiguous data** [COMPUT SCI] Data that are stored in a collection of adjacent locations in a computer memory device. [ 'kən'ti:g-ya-wəs 'dɑ:d-ə ]

**continental code** [COMMUN] The code commonly used for manual telegraph communication, consisting of short (dot) and long (dash) symbols, but not the various-length spaces used in the original Morse code. Also known as international Morse code. [ 'kənt-ən'tent-əl 'kōd ]

**contingency interrupt** [COMPUT SCI] A processing interruption due to an operator's action or due to an abnormal result from the system or from a program. [ 'kən'tin-ʃən-sē 'in-tə,rəpt ]

**continue statement** [COMPUT SCI] A nonexecutable statement in FORTRAN used principally as a target for transfers, particularly as the last statement in the range of a do statement. [ 'kən'tin-yū,stæt-mənt ]

**continuity** [ELEC] Continuous effective contact of all components of an electric circuit to give it high conductance by providing low resistance. [ 'kənt-ən'yū-əd-ē ]

**continuity test** [ELEC] An electrical test used to determine the presence and location of a broken connection. [ 'kənt-ən'yū-əd-ē,tes't ]

**continuous carrier** [COMMUN] A carrier signal that is transmitted at all times during maintenance of a communications link, whether or not data are being transmitted. [ 'kən'tin-ya-wəs 'kɑ:ri-ər ]

**continuous clamp** See voltage-amplitude-controlled clamp [ 'kən'tin-ya-wəs 'klɑmp ]

**continuous comparator** See linear comparator. [ 'kən'tin-ya-wəs kəm'pɑ:r-əd-ər ]

**continuous control** [CONT SYS] Automatic control in which the controlled quantity is measured continuously and corrections are a continuous function of the deviation. [ 'kən'tin-ya-wəs kən'trɔ:l ]

**continuous-duty rating** [ELEC] The rating that defines the load which can be carried for an indefinite time without exceeding a specified temperature rise. [ 'kən'tin-ya-wəs,di:əd-ē 'ræd-iŋ ]

**continuous film scanner** [ELECTR] A television film scanner in which the motion picture film moves continuously while being scanned by a flying-spot device. [ 'kən'tin-ya-wəs 'film,skɑ:n-ər ]

**continuous forms** [COMPUT SCI] 1. In character recognition, any batch of source information that exists in reel form, such as tally rolls or cash-register receipts. 2. Preprinted forms that repeat on each page, with the bottom of one page joined to the top of the next by a perforated attachment, so that they can be fed through a printer. [ 'kən'tin-ya-wəs 'fɔ:mz ]

**continuous loading** [ELEC] Loading in which the added inductance is distributed uniformly along a line by wrapping magnetic material around each conductor. [ 'kən'tin-ya-wəs 'lɔ:d-ŋ ]

**continuously adjustable transformer** See variable transformer. [ 'kən'tin-ya-wəs-lē ə'ʃəs-tə-bəl trɑnz'fɔ:m-ər ]

**continuous stationery** [COMPUT SCI] A continuous ribbon of paper consisting of several hundred or more sheets separated by perforations and folded to form a pack, used to feed a computer printer and generally having sprocket holes along the margin for this purpose. [ 'kən'tin-ya-wəs 'stā-shə,ner-ē ]

**continuous stationery reader** [COMPUT SCI] A type of character reader which processes only continuous forms of predefined dimensions. { kən'tin-yə-wəs 'stā-shə,ner-ē 'rēd-ər }  
**continuous system** [CONT SYS] A system whose inputs and outputs are capable of changing at any instant of time. Also known as continuous-time signal system. { kən'tin-yə-wəs 'sis-təm }  
**continuous-time signal system** See continuous system. { kən'tin-yə-wəs 'tīm 'sig-nəl, 'sis-təm }  
**continuous-tone squelch** [ELECTR] Squelch in which a continuous subaudible tone, generally below 200 hertz, is transmitted by frequency-modulation equipment along with a desired voice signal. { kən'tin-yə-wəs 'tōn 'skwelch }  
**continuous variable** [COMPUT SCI] A variable that can take on any of a range of values. { kən'tin-yə-wəs 'vər-ē-ə-bəl }  
**continuous wave** [ELECTROMAG] A radio or radar wave whose successive sinusoidal oscillations are identical under steady-state conditions. Abbreviated CW. Also known as type A wave. { kən'tin-yə-wəs 'wāv }  
**continuous-wave Doppler radar** See continuous-wave radar. { kən'tin-yə-wəs 'wāv 'dɒp-lər, 'rā 'dār }  
**continuous-wave jammer** [ELECTR] An electronic jammer that emits a single frequency continuously, giving the appearance of a picket or rail fence on an elementary radar display. Also known as rail-fence jammer. { kən'tin-yə-wəs 'wāv 'jam-ər }  
**continuous-wave modulation** [COMMUN] Modulation of a continuous wave by modification of its amplitude, frequency, or phase, in contrast to pulse modulation. { kən'tin-yə-wəs 'wāv 'mā-j-ə'lā-shən }  
**continuous-wave radar** [ENG] A radar system in which a transmitter sends out a continuous flow of radio energy; the target reradiates a small fraction of this energy to a separate receiving antenna. Also known as continuous-wave Doppler radar. { kən'tin-yə-wəs 'wāv 'rā 'dār }  
**continuous-wave tracking system** [ELECTR] Tracking system which operates by keeping a continuous radio beam on a target and determining its behavior from changes in the antenna necessary to keep the beam on the target. { kən'tin-yə-wəs 'wāv 'trak-ɪŋ, 'sis-təm }  
**contour analysis** [COMPUT SCI] In optical character recognition, a reading technique that employs a roving spot of light which searches out the character's outline by bouncing around its outer edges. { 'kæn,tʊr ə'nal-ə-səs }  
**contouring control** [COMPUT SCI] The guidance by a computer of a machine tool along a programmed path by interpolating many intermediate points between selected points. { 'kæn,tʊr-ɪŋ kən'trɔl }  
**contour model** [COMPUT SCI] A model for describing the run-time execution of programs written in block-structured languages, consisting of a program component, the data component, and the control component. { 'kæn,tʊr, 'mäd-əl }

**contourograph** [ELECTR] Device using a cathode-ray oscilloscope to produce imagery that has a three-dimensional appearance. { 'kæn'tʊr-ə 'grɑf }  
**contracted code sonde** See code-sending radiosonde. { kən'træk-təd 'kɒd, 'sænd }  
**contrast** [COMMUN] The degree of difference in tone between the lightest and darkest areas in a video or facsimile picture. [COMPUT SCI] In optical character recognition, the difference in color, reflectance, or shading between two areas of a surface, for example, a character and its background. { 'kæn,traɪst }  
**contrast control** [ELECTR] A manual control that adjusts the range of brightness between highlights and shadows on the reproduced image of a display device. { 'kæn,traɪst kən'trɔl }  
**contrast ratio** [ELECTR] The ratio of the maximum to the minimum luminance values in a video image. { 'kæn,traɪst, 'rā-shō }  
**control** [COMPUT SCI] 1. The section of a digital computer that carries out instructions in proper sequence, interprets each coded instruction, and applies the proper signals to the arithmetic unit and other parts in accordance with this interpretation. 2. A mathematical check used with some computer operations. [CONT SYS] A means or device to direct and regulate a process or sequence of events. [ELECTR] An input element of a cryotron. { kən'trɔl }  
**control accuracy** [CONT SYS] The degree of correspondence between the ultimately controlled variable and the ideal value in a feedback control system. { kən'trɔl ək-yə-rə-sē }  
**control and read-only memory** [COMPUT SCI] A read-only memory that also provides storage, sequencing, execution, and translation logic for various microinstructions. Abbreviated CROM. { kən'trɔl ən 'rēd, ən-lē 'mem-rē }  
**control bit** [COMPUT SCI] A bit which marks either the beginning or the end of a character transmitted in asynchronous communication. { kən'trɔl 'bit }  
**control block** [COMPUT SCI] A storage area containing (in condensed, formalized form) the information required for the control of a task, function, operation, or quantity of information. { kən'trɔl, 'blɒk }  
**control board** [ELEC] A panel at which one can make circuit changes, as in lighting a theater. [ENG] A panel in which meters and other indicating instruments display the condition of a system, and dials, switches, and other devices are used to modify circuits to control the system. Also known as control panel; panel board. { kən'trɔl, 'bɔrd }  
**control break** [COMPUT SCI] 1. A key change which takes place in a control data field, especially in the execution of a report program. 2. A suspension of computer operation that is accomplished by simultaneously depressing the control key and the break key. { kən'trɔl 'bræk }  
**control character** [COMPUT SCI] A character whose occurrence in a particular context initiates,



ce using a cathode-imagery that has ince. { ,kän'tür-ə }

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COMPUT SCI] In opt the difference in between two areas character and its

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ction of a digital uctions in proper d instruction, and the arithmetic d'ance with this tical check used ns. [CONT SYS] and regulate a ts. [ELECTR] An

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A key change data field, es- port program. operation that sly depressing y. { kän'tröl }

aracter whose text initiates.

modifies, or stops a control operation in a computer or associated equipment. { kän'tröl ,kar-ik-tör }

**control characteristic** [ELECTR] 1. The relation, usually shown by a graph, between critical grid voltage and anode voltage of a gas tube. 2. The relation between control ampere-turns and output current of a magnetic amplifier. { kän'tröl ,kar-ik-tä'ris-tik }

**control circuit** [COMPUT SCI] One of the circuits that responds to the instructions in the program for a digital computer. [ELEC] A circuit that controls some function of a machine, device, or piece of equipment. [ELECTR] The circuit that feeds the control winding of a magnetic amplifier. { kän'tröl ,sär-kät }

**control code** [COMPUT SCI] A special code that is entered by a user to carry out a particular function, such as the moving or deleting of text in a word-processing program. { kän'tröl ,köd }

**control computer** [COMPUT SCI] A computer which uses inputs from sensor devices and outputs connected to control mechanisms to control physical processes. { kän'tröl ,käm'pyüd-ər }

**control counter** [COMPUT SCI] A counter providing data used to control the execution of a computer program. { kän'tröl ,kaün-tär }

**control data** [COMPUT SCI] Data used for identifying, selecting, executing, or modifying another set of data, a routine, a record, or the like. { kän'tröl ,däd-ə }

**control desk** See console. { kän'tröl ,desk }

**control diagram** See flow chart. { kän'tröl ,dī-ə ,gram }

**control electrode** [ELECTR] An electrode used to initiate or vary the current between two or more electrodes in an electron tube. { kän'tröl ,'lek ,tröd }

**control element** [CONT SYS] The portion of a feedback control system that acts on the process or machine being controlled. { kän'tröl ,el-ə ,mënt }

**control flow graph** [COMPUT SCI] A graph describing the logic structure of a software module, in which the nodes represent computational statements or expressions, the edges represent transfer of control between nodes, and each possible execution path of the module has a corresponding path from the entry to the exit node of the graph. { kän'tröl ,'flö ,graf }

**control grid** [ELECTR] A grid, ordinarily placed between the cathode and an anode, that serves to control the anode current of an electron tube. { kän'tröl ,grid }

**control-grid bias** [ELECTR] Average direct-current voltage between the control grid and cathode of a vacuum tube. { kän'tröl ,grid ,bi-əs }

**control-grid plate transconductance** [ELECTR] Ratio of the amplification factor of a vacuum tube to its plate resistance, combining the effects of both into one term. { kän'tröl ,grid ,plät ,tranz-kän'dök-täns }

**control handle** See handle. { kän'tröl ,hand-əl }

**control head gap** [COMPUT SCI] The distance maintained between the read/write head of a

disk drive and the disk surface. { kän'tröl ,hed ,gap }

**control hierarchy** See hierarchical control. { kän'tröl ,hi-ər,är-kē }

**control inductor** See control winding. { kän'tröl in'dak-tör }

**control instructions** [COMPUT SCI] Those instructions in a computer program which ensure proper sequencing of instructions so that a programmed task can be performed correctly. { kän'tröl in'sträk-shənz }

**control key** [COMPUT SCI] A special key on a computer keyboard which, when depressed together with another key, generates a different signal than would be produced by the second key alone. { kän'tröl ,kē }

**controllability** [CONT SYS] Property of a system for which, given any initial state and any desired state, there exists a time interval and an input signal which brings the system from the initial state to the desired state during the time interval. { kän'tröl-ə'bil-əd-ē }

**control lead** [COMPUT SCI] A character or sequence of characters indicating that the information following is a control code and not data. { kän'tröl ,léd }

**controlled avalanche device** [ELECTR] A semiconductor device that has rigidly specified maximum and minimum avalanche voltage characteristics and is able to operate and absorb momentary power surges in this avalanche region indefinitely without damage. { kän'tröld 'av-ə ,lanch di'vis }

**controlled avalanche rectifier** [ELECTR] A silicon rectifier in which carefully controlled, nondestructive internal avalanche breakdown across the entire junction area protects the junction surface, thereby eliminating local heating that would impair or destroy the reverse blocking ability of the rectifier. { kän'tröld 'av-ə ,lanch 'rek-tä,fi-ər }

**controlled avalanche transit-time triode** [ELECTR] A solid-state microwave device that uses a combination of IMPATT diode and  $n-p-n$  bipolar transistor technologies; avalanche and drift zones are located between the base and collector regions. Abbreviated CATT. { kän'tröld 'av-ə ,lanch ,tranz-ət ,tīm 'trī,öd }

**controlled carrier modulation** [COMMUN] System of modulation wherein the carrier is amplitude-modulated by the signal frequencies and, in addition, the carrier is amplitude-modulated according to the envelope of the signal so that the modulation factor remains constant regardless of the amplitude of the signal. Also known as floating carrier modulation; variable carrier modulation. { kän'tröld 'kar-ē-ər ,mäj-ə'lä-shən }

**controlled mercury-arc rectifier** [ELECTR] A mercury-arc rectifier in which one or more electrodes control the start of the discharge in each cycle and thereby control output current. { kän'tröld ,mər-kyū-rē ,ärk 'rek-tä,fi-ər }

**controlled parameter** [ENCL] In the formulation of an optimization problem, one of the parameters

## controlled rectifier

whose values determine the value of the criterion parameter. {kən'trɒld pə'ræm-əd-ər}

**controlled rectifier** [ELECTR] A rectifier that has provisions for regulating output current, such as with thyatrons, ignitrons, or silicon controlled rectifiers. {kən'trɒld 'rek-tə,fi-ər}

**controlled variable** [CONT SYS] In process automatic-control work, that quantity or condition of a controlled system that is directly measured or controlled. {kən'trɒld 'ver-ə-bəl}

**controller** See automatic controller. {kən'trɒl-ər}

**controller-structure interaction** [CONT SYS] Feedback of an active control algorithm in the process of model reduction; this occurs through observation spillover and control spillover. {kən'trɒl-ər ,strʌk-ʃər in-tər'æk-shən}

**control limits** [ELECTR] In radar evaluation, upper and lower control limits are established at those performance figures within which it is expected that 95% of quality-control samples will fall when the radar is performing normally. {kən'trɒl ,lim-its}

**control logic** [COMPUT SCI] The sequence of steps required to perform a specific function. {kən'trɒl ,ləj-ik}

**control mark** See tape mark. {kən'trɒl ,mɑ:k}

**control-message display** [COMPUT SCI] A device, such as a console typewriter, on which control information, such as information on the progress of a running computer program, is displayed in ordinary language. {kən'trɒl ,mes-i dɪ'splæ}

**control module** [COMPUT SCI] The set of registers and circuitry required to carry out a specific function. {kən'trɒl ,mɔ:ju:l}

**control operation** [COMPUT SCI] Any action that affects data processing but is not directly included, such as managing input/output operations or determining job sequence. {kən'trɒl ,ɒp-ə,ræ-shən}

**control panel** [COMPUT SCI] An array of jacks or sockets in which wires (or other elements) may be plugged to control the action of an electromechanical device in a data-processing system such as a printer. Also known as plugboard; wiring board. [ELEC] See control board; panel board. {kən'trɒl ,pæn-əl}

**control point** [COMPUT SCI] 1. The numerical value of the controlled variable (speed, temperature, and so on) which, under any fixed set of operating conditions, an automatic controller operates to maintain. 2. One of the hardware locations at which the output of the instruction decoder of the processor activates the input to and output from specific registers as well as operational resources of the system. {kən'trɒl ,pɔɪnt}

**control program** [COMPUT SCI] A program which carries on input/output operations, loading of programs, detection of errors, communication with the operator, and so forth. {kən'trɒl ,prɒ-gram}

**control record** [COMPUT SCI] A special record added to the end of a file to provide information about the file and the records in it. {kən'trɒl ,rek-əd}

**control register** [COMPUT SCI] Any one of the registers in a computer used to control the execution of a computer program. {kən'trɒl ,rej-ə-stər}

**control room** [COMMUN] A room from which engineers and production people control and direct a video or audio program or a recording session. {kən'trɒl ,rʊm}

**control section** [COMPUT SCI] 1. The smallest integral subsection of a program, that is, the smallest unit of code that can be separately relocated during loading. 2. The part of a central processing unit that controls other sections of the unit. {kən'trɒl ,sek-shən}

**control sequence** [COMPUT SCI] The order in which a set of executions are carried to perform a specific function. {kən'trɒl ,sɛ-kwəns}

**control signal** [COMPUT SCI] A set of pulses used to identify the channels to be followed by transferred data. [CONT SYS] The signal applied to the device that makes corrective changes in a controlled process or machine. {kən'trɒl ,sɪg-nəl}

**control spillover** [CONT SYS] The excitation by an active control system of modes of motion that have been omitted from the control algorithm in the process of model reduction. {kən'trɒl 'spɪl ,əv-ər}

**control state** [COMPUT SCI] The operating mode of a system which permits it to override its normal sequence of operations. {kən'trɒl ,stet}

**control statement** [COMPUT SCI] A statement in a computer program that controls program execution, such as a GOTO statement, conditional jump, or a loop. {kən'trɒl ,stæt-mənt}

**control supervisor** [COMPUT SCI] The computer software which controls the processing of the system. {kən'trɒl ,sü-pər-vi-zər}

**control switching point** [COMMUN] A telephone office which is an important switching center in the routing of long-distance calls in the direct distance dialing system. Abbreviated CSP. {kən'trɒl 'swɪtʃ-ɪŋ ,pɔɪnt}

**control symbol** [COMPUT SCI] A symbol which, coded into the machine memory, controls certain steps in the mechanical translation process; since control symbols are not contextual symbols, they appear neither in the input nor in the output. {kən'trɒl ,sɪm-bəl}

**control synchro** See control transformer. {kən'trɒl ,sɪŋ-krɒ}

**control system** [ENG] A system in which one or more outputs are forced to change in a desired manner as time progresses. {kən'trɒl ,sɪs-təm}

**control-system feedback** [CONT SYS] A signal obtained by comparing the output of a control system with the input, which is used to diminish the difference between them. {kən'trɒl ,sɪs-təm 'fɛd,bæk}

**control systems equipment** [COMPUT SCI] Computers which are an integral part of a total facility or larger complex of equipment and have the primary purpose of controlling, monitoring, analyzing, or measuring a process or other equipment. {kən'trɒl ,sɪs-təmz 'kwɪp-mənt}

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**control total** [COMPUT SCI] The sum of the num-  
bers in a specified record field of a batch of re-  
cords, determined repetitiously during computer  
processing so that any discrepancy from the  
control indicates an error. { kən'trɔɪ ,tɔd-əl }

**control track** [ENG ACOUS] A supplementary  
sound track, usually containing tone signals that  
control the reproduction of the sound track,  
such as by changing feed levels to loudspeakers  
in a theater to achieve stereophonic effects.  
{ kən'trɔɪ ,træk }

**control transformer** [ELEC] A synchro in which  
the electrical output of the rotor is dependent  
on both the shaft position and the electric input  
to the stator. Also known as control synchro.  
{ kən'trɔɪ tranz'fɔr-mər }

**control unit** [COMPUT SCI] An electronic device  
containing data buffers and logical circuitry,  
situated between the computer channel and  
the input/output device, and controlling data  
transfers and such operations as tape rewind.  
{ kən'trɔɪ ,yü-nət }

**control unit terminal emulation** [COMPUT SCI] A  
technique that enables a personal computer to  
imitate a terminal of a main frame. Abbreviated  
CUT emulation. { kən'trɔɪ ,yü-nət 'tər-mə-nəl  
'em-yo'lä-shən }

**control variable** [CONT SYS] One of the input  
variables of a control system, such as motor  
torque or the opening of a valve, which can  
be varied directly by the operator to maximize  
some measure of performance of the system.  
{ kən'trɔɪ ,ver-ə-bəl }

**control winding** [ELECTR] A winding used on a  
magnetic amplifier or saturable reactor to apply  
control magnetomotive forces to the core. Also  
known as control inductor. { kən'trɔɪ ,wɪnd-ɪŋ }

**control word** [COMPUT SCI] A computer word spec-  
ifying a certain action to be taken. { kən'trɔɪ  
'wɜrd }

**convection current** [ELECTR] The time rate at  
which the electric charges of an electron  
stream are transported through a given surface.  
{ kən'vek-shən ,kər-ənt }

**convective current** See convection current.  
{ kən'vek-div ,kər-ənt }

**convective discharge** [ELECTR] The movement of  
a visible or invisible stream of charged particles  
away from a body that has been charged to a  
sufficiently high voltage. Also known as electric  
wind, static breeze. { kən'vek-div 'dis,çärj }

**convenience receptacle** See outlet. { kən'ven-  
jəns ri'sep-təkəl }

**conventional algorithm** [COMMUN] A crypto-  
graphic algorithm in which the enciphering and  
deciphering keys are easily derivable from each  
other, or are identical, and both must be kept  
secret. { kən'ven-çən-əl 'al-gə,rɪθ-əm }

**conventional current** [ELEC] The concept of cur-  
rent as the transfer of positive charge, so that its  
direction of flow is opposite to that of electrons  
which are negatively charged. { kən'ven-çən-əl  
'kər-ənt }

**conventional definition television** [COMMUN]  
The analog NTSC (National Television Stan-

dards Committee) television system. Abbrevi-  
ated CDTV. { kən'ven-çən-əl 'def-ə,nɪʃ-ən  
'tel-ə,vɪz-ən }

**conventional programming** [COMPUT SCI] The  
use of standard programming languages, as  
opposed to application development languages,  
financial planning languages, query languages,  
and report programs. { kən'ven-çən-əl 'prɔ  
,grəm-ɪŋ }

**convergence** [ELECTR] A condition in which the  
electron beams of a multibeam cathode-ray tube  
intersect at a specified point, such as at an  
opening in the shadow mask of a three-gun  
color television picture tube; both static con-  
vergence and dynamic convergence are required.  
{ kən'ver-jəns }

**convergence circuit** [ELECTROMAG] An auxiliary  
deflection system in a color television receiver  
which maintains convergence, having separate  
convergence coils for electromagnetic controls  
of the positions of the three beams in a con-  
vergence yoke around the neck of the kinescope.  
{ kən'ver-jəns ,sər-kət }

**convergence coil** [ELECTR] One of the coils  
used to obtain convergence of electron beams  
in a three-gun color television picture tube.  
{ kən'ver-jəns ,kɔɪl }

**convergence control** [ELECTR] A control used in  
a color display device to adjust certain param-  
eters of the three-gun color picture tube to achieve  
convergence. { kən'ver-jəns kən'trɔɪ }

**convergence electrode** [ELECTR] An electrode  
whose electric field converges two or more  
electron beams. { kən'ver-jəns i'lek,troʊd }

**convergence magnet** [ELECTR] A magnet assem-  
bly whose magnetic field converges two or  
more electron beams; used in three-gun color  
picture tubes. Also known as beam magnet.  
{ kən'ver-jəns ,mag-nət }

**Conversational Algebraic Language** See CAL.  
{ kən-vər'sä-shən-əl al-jə;brä-ik 'læŋ-gwɪj }

**conversational compiler** [COMPUT SCI] A com-  
piler which immediately checks the validity  
of each source language statement entered  
to the computer and informs the user if the  
next statement can be entered or if a mistake  
must be corrected. Also known as interpreter.  
{ kən-vər'sä-shən-əl kəm'pɪl-ər }

**conversational mode** [COMMUN] A computer  
operating mode that permits queries and  
responses between the computer and  
human operators at keyboard terminals.  
{ kən-vər'sä-shən-əl ,mɔd }

**conversational processing** [COMPUT SCI] The op-  
erating mode of a computer system which  
enables a user to have each statement he  
keys into the system processed immediately.  
{ kən-vər'sä-shən-əl 'präs-əs-ɪŋ }

**conversational time-sharing** [COMPUT SCI] The  
simultaneous utilization of a computer system  
by multiple users, each user being equipped with  
a remote terminal with which he communicates  
with the computer in conversational mode.  
{ kən-vər'sä-shən-əl 'tɪm ,ʃer-ɪŋ }

**conversion** See data conversion. { kən'ver-zhən }

## conversion gain

**conversion gain** [ELECTR] 1. Ratio of the intermediate-frequency output voltage to the input signal voltage of the first detector of a superheterodyne receiver. 2. Ratio of the available intermediate-frequency power output of a converter or mixer to the available radio-frequency power input. { kən'vər-zhən ,gān }

**conversion program** [COMPUT SCI] A set of instructions which allows a program written for one system to be run on a different system. { kən'vər-zhən ,prō-gram }

**conversion rate** [COMPUT SCI] The number of complete conversions an analog-to-digital converter can perform per unit time, usually specified in cycles (or conversions) per second. { kən'vər-zhən ,rāt }

**conversion routine** [COMPUT SCI] A flexible, self-contained, and generalized program used for data conversion, which only requires specifications about very few facts in order to be used by a programmer. { kən'vər-zhən rū'tēn }

**conversion time** [COMPUT SCI] The time required to read in data from one code into another code. { kən'vər-zhən ,tīm }

**convert** [COMPUT SCI] To transform the representation of data. { kən'vɔrt }

**converter** [COMPUT SCI] A computer unit that changes numerical information from one form to another, as from decimal to binary or vice versa, from fixed-point to floating-point representation, from magnetic tape to disk storage, or from digital to analog signals and vice versa. Also known as data converter. [ELECTR] 1. The section of a superheterodyne radio receiver that converts the desired incoming radio-frequency signal to an intermediate-frequency value; the converter section includes the oscillator and the mixer-first detector. Also known as heterodyne conversion transducer; oscillator-mixer-first-detector. 2. An auxiliary unit used with a television or radio receiver to permit reception of channels or frequencies for which the receiver was not originally designed. 3. In facsimile, a device that changes the type of modulation delivered by the scanner. 4. Unit of a radar system in which the mixer of a superheterodyne receiver and usually two stages of intermediate-frequency amplification are located; performs a preamplifying operation. { kən'vɔrd-ər }

**converter substation** [ELEC] An electric power substation whose main function is the conversion of power from ac to dc, and vice versa. { kən'vɔrd-ər 'səb,stā-shən }

**converter tube** [ELECTR] An electron tube that combines the mixer and local-oscillator functions of a heterodyne conversion transducer. { kən'vɔrd-ər ,tüb }

**convolutional code** [COMMUN] An error-correcting code that processes incoming bits serially rather than in large blocks. { ,kən-və'lyū-shən-əl 'kōd }

**convolver** [ELECTR] A surface acoustic-wave device in which signal processing is performed by a nonlinear interaction between two waves

traveling in opposite directions. Also known as acoustic convolver. { kən'vəl-vɔr }

**cookbook** [COMPUT SCI] A document that describes how to install and use a software product or carry out other complex tasks in step-by-step fashion. { 'kūk,būk }

**cookie** [COMPUT SCI] A data file written to a hard drive by some Web sites, contains information the site can use to track such things as passwords, login, registration or identification, user preferences, online shopping cart information, and lists of pages visited. { 'kūk-ē }

**cooled infrared detector** [ELECTR] An infrared detector that must be operated at cryogenic temperatures, such as at the temperature of liquid nitrogen, to obtain the desired infrared sensitivity. { 'kūld ,in-frə'red dɪ'tek-tɔr }

**cooperative multitasking** [COMPUT SCI] A method of running more than one program on a computer at a time in which the program currently in control of the processor retains the control until it yields the control to another program voluntarily, which it can do only at certain points in the program. Also known as nonpreemptive multitasking. { kō,əp-rad-iv 'məl-tə,təsk-ɪŋ }

**coordinate addressing** [COMPUT SCI] The use of cartesian coordinates to specify a location, such as the position of a character in an electronic display. { kō'ɔrd-ən-ət 'əd,rez-ɪŋ }

**coordinate data receiver** [ELECTR] A receiver specifically designed to accept the signal of a coordinate data transmitter and reconvert this signal into a form suitable for input to associated equipment such as a plotting board, computer, or radar set. { kō'ɔrd-ən-ət 'dɑd-ə ri ,sē-vɔr }

**coordinate data transmitter** [ELECTR] A transmitter that accepts two or more coordinates, such as those representing a target position, and converts them into a form suitable for transmission. { kō'ɔrd-ən-ət 'dɑd-ə tranz,mɪd-ər }

**coordinated-axis control** [CONT SYS] Robotic control in which the robot axes reach their end points simultaneously, thus giving the robot's motion a smooth appearance. { kō'ɔrd-ən ,əd-əd ,ɪk-səs kən,trɔl }

**coordinated geometry** See COGO. { kō'ɔrd-ən ,əd-əd ,jē'əm-ə-trē }

**coordinated transpositions** [ELEC] Transpositions which are installed in either electric supply or communications circuits or in both, for the purpose of reducing inductive coupling, and which are located effectively with respect to the discontinuities in both the electric supply and communications circuits. { kō'ɔrd-ən ,əd-əd tranz,pə'zɪʃ-ən-z }

**coordinate indexing** [COMPUT SCI] An indexing scheme in which equal-rank descriptors are used to describe a document, for information retrieval by a computer or other means. { kō'ɔrd-ən-ət 'ɪn,deks-ɪŋ }

**coordinate storage** See matrix storage. { kō'ɔrd-ən-ət 'stɔr-ɪj }

ons. Also known as  
[ä-l'vər]  
document that de-  
e a software product  
asks in step-by-step

le written to a hard  
ontains information  
hings as passwords,  
cation, user prefer-  
formation, and lists

LECTR] An infrared  
ated at cryogenic  
e temperature of  
e desired infrared  
di'tek-tər]

[COMPUT SCI] A  
tan one program  
hich the program  
cessor retains the  
ontrol to another  
ontrol can do only at  
t. Also known as  
[kō,äp-räd-iv

UT SCI] The use of  
ya location, such  
in an electronic  
-ig]

LECTR] A receiver  
ot the signal of  
r and reconvert  
ble for input to  
a plotting board,  
rd-ən-ät 'dad-ə ri

ELECTR] A trans-  
ordinates, such  
osition, and con-  
or transmission.  
r]

T SYS] Robotic  
reach their end  
ing the robot's  
[kō'örd-ən

[kō'örd-ən

Transpositions  
electric supply  
r both, for the  
coupling, and  
ith respect to  
electric sup-  
[kō'örd-ən

] An indexing  
ptors are used  
ation retrieval  
[kō'örd-ən-ät

ge. [kō'örd-

**coordination** [ELEC] Design of series-connected  
circuit breakers whereby breakers with lower  
current ratings trip before those with higher  
ratings. [kō,örd-ən'ä-shən]

**coplanar electrodes** [ELECTR] Electrodes mounted  
in the same plane. [kō'plän-är i'lek,tröd-z]

**copper cable** [ELEC] A mechanically assembled  
group of copper wires, used in place of a single,  
large wire for increased flexibility. ['küp-är  
'kä-bal]

**copper loss** [ELEC] Power loss in a winding due to  
current flow through the resistance of the copper  
conductors. Also known as I<sup>2</sup>R loss. ['küp-är  
'lós]

**copper oxide photovoltaic cell** [ELECTR] A pho-  
tovoltaic cell in which light acting on the surface  
of contact between layers of copper and cuprous  
oxide causes a voltage to be produced. ['küp-är  
'äk,sid ,föd-ö-völ'tä-ik 'sel]

**copper oxide rectifier** [ELECTR] A metallic recti-  
fier in which the rectifying barrier is the junction  
between metallic copper and cuprous oxide.  
['küp-är 'äk,sid 'rek-tä,fi-är]

**copper pair** See twisted pair. ['küp-är ,per]

**copper sulfide rectifier** [ELECTR] A semiconduc-  
tor rectifier in which the rectifying barrier is the  
junction between magnesium and copper sulfide.  
['küp-är 'säl,fid 'rek-tä,fi-är]

**coprocessor** [COMPUT SCI] A processing unit that  
works together with a primary central processing  
unit to speed a computer's execution of time-  
consuming operations. [kō'prä,ses-ər]

**copy** [COMMUN] To transcribe Morse code signals  
into written form. [COMPUT SCI] A string proce-  
dure in Algol by means of which a new byte string  
can be generated from an existing byte string.  
['küp-ē]

**copying program** [COMPUT SCI] A system program  
which copies a data or program file from one  
peripheral device onto another. ['küp-ē-ig  
'prö-gräm]

**copy protection** See software protection. ['küp-ē  
'prä,tek-shən]

**CORBA** See common object request broker.  
['kör-bä]

**corbinotron** [ENG] The combination of a corbino  
disk, made of high-mobility semiconductor ma-  
terial, and a coil arranged to produce a mag-  
netic field perpendicular to the disk. [kör'bē-  
nə,trä'n]

**cord** [ELEC] A small, very flexible insulated cable.  
[körd]

**cord circuit** [ELEC] Connecting circuit terminat-  
ing in a plug at one or both ends and used at  
switchboard positions in establishing telephone  
connections. ['körd ,sər-kät]

**cordless telephone** [COMMUN] A telephone  
whose headset and base are equipped with  
small antennas and are linked by low-power  
radio instead of a wire. ['körd-ləs 'tel-ə,fōn]

**cordwood module** [ELECTR] High-density circuit  
module in which discrete components are  
mounted between and perpendicular to two  
small, parallel printed circuit boards to which

their terminals are attached. ['körd,wüd  
'mä-jül]

**core** See magnetic core. [kör]

**core array** [ELECTR] A rectangular grid arrange-  
ment of magnetic cores. ['kör ə'rä]

**core bank** [ELECTR] A stack of core arrays and  
associated electronics, the stack containing a  
specific number of core arrays. ['kör ,bänk]

**core-dump** [COMPUT SCI] To copy the contents of  
all or part of core storage, usually into an external  
storage device. ['kör ,dämp]

**core hitch** [ELEC] Attachment to a cable core to  
permit pulling it into a duct without damaging  
the sheath. ['kör ,hich]

**core image** [COMPUT SCI] 1. A computer program  
whose storage addresses have been assigned so  
that it can be loaded directly into main storage  
for processing. 2. A visual representation of a  
computer's main storage. ['kör ,im-ij]

**core-image library** [COMPUT SCI] A collection of  
computer programs residing on mass-storage  
device in ready-to-run form. ['kör 'im-ij ,lī  
'brer-ē]

**coreless-type induction heater** [ENG] A device  
in which a charge is heated directly by induction,  
with no magnetic core material linking the  
charge. Also known as coreless-type induction  
furnace. ['kör-ləs ,tīp in'dak-shən ,héd-ər]

**core logic** [ELECTR] Logic performed in ferrite  
cores that serve as inputs to diode and transistor  
circuits. ['kör ,läj-ik]

**core memory** See magnetic core storage. ['kör  
'mem-rē]

**core memory resident** [COMPUT SCI] A control  
program which is in the main memory of a  
computer at all times to supervise the processing  
of the computer. ['kör ,mem-rē ,rez-ə-dänt]

**core rope storage** [COMPUT SCI] Direct-access  
storage consisting of a large number of  
doughnut-shaped ferrite cores arranged on a  
common axis, with sense, inhibit, and set wires  
threaded through or around individual cores in a  
predetermined manner to provide fixed storage  
of digital data; each core rope stores one or more  
complete words, rather than just a single bit.  
['kör ,röp ,stör-ij]

**coresident** [COMPUT SCI] A computer program  
or program module that is stored in a com-  
puter memory along with other programs.  
[kō'rez-ə-dänt]

**core stack** [ELECTR] A number of core arrays, next  
to one another and treated as a unit. ['kör  
'stak]

**core storage** [COMPUT SCI] The main memory of a  
computer. ['kör ,stör-ij]

**corner effect** [ELECTR] The departure of the  
frequency-response curve of a band-pass filter  
from a perfect rectangular shape, so that the  
corners of the rectangle are rounded. ['kör-nər  
'fekt]

**corner frequency** See break frequency. ['kör-nər  
'frē-kwən-sē]

**corner reflector** [ELECTROMAG] An antenna con-  
sisting of two conducting surfaces intersecting

- at an angle that is usually  $90^\circ$ , with a dipole or other antenna located on the bisector of the angle. { 'kō-r-nər rī'flek-tər }
- corona** See corona discharge. { kə'rō-nə }
- corona current** [ELEC] The current of electricity equivalent to the rate of charge transferred to the air from an object experiencing corona discharge. { kə'rō-nə 'kər-ənt }
- corona discharge** [ELEC] A discharge of electricity appearing as a bluish-purple glow on the surface of and adjacent to a conductor when the voltage gradient exceeds a certain critical value; due to ionization of the surrounding air by the high voltage. Also known as aurora; corona; electric corona. { kə'rō-nə 'dis, chārj }
- corona failure** [ELEC] High-voltage failure initiated by corona discharge at areas of high-voltage stress such as metal inserts or terminals. { kə'rō-nə 'fāl-yər }
- corona resistance** [ELEC] Ability of a conductor to resist destruction when a high-voltage electrostatic field ionizes within insulation voids. { kə'rō-nə rī'zīs-təns }
- corona shield** [ELEC] A shield placed about a point of high potential to redistribute electrostatic lines of force. { kə'rō-nə 'shēld }
- corona stabilization** [ELEC] The increase in the breakdown voltage of a gas separating two electrodes, where the electric field is very high at one pointed electrode and low at the other, due to the reduction of electric field around the pointed electrode by corona discharge. { kə'rō-nə ,stā-bā-lā'zā-shən }
- corona start voltage** [ELEC] The voltage difference at which corona discharge is initiated in a given system. { kə'rō-nə 'stārt ,vōl-tij }
- corona tube** [ELEC] A gas-discharge voltage-reference tube employing a corona discharge. { kə'rō-nə ,tūb }
- corona voltmeter** [ELEC] A voltmeter in which the crest value of a voltage is indicated by the inception of corona at a known electrode spacing. { kə'rō-nə 'vōlt ,mēd-ər }
- coroutine** [COMPUT SCI] A program module for which the lifetime of a particular activation record is independent of the time when control enters or leaves the module, and in which the activation record maintains a local instruction counter so that, whenever control enters the module, execution begins at the point where it stopped when control last left that particular instance of execution. { 'kō-rū,tēn }
- correction time** [CONT SYS] The time required for the controlled variable to reach and stay within a predetermined band about the control point following any change of the independent variable or operating condition in a control system. Also known as settling time. { kə'rek-shən ,tīm }
- corrective action** [CONT SYS] The act of varying the manipulated process variable by the controlling means in order to modify overall process operating conditions. { kə'rek-tiv 'ak-shən }
- corrective maintenance** [COMPUT SCI] The maintenance performed as required, on an unscheduled basis, by the contractor following equipment failure. Also known as remedial maintenance. [ENG] A procedure of repairing components or equipment as necessary either by on-site repair or by replacing individual elements in order to keep the system in proper operating condition. { kə'rek-tiv mēnt-ən-əns }
- corrective network** [ELEC] An electric network inserted in a circuit to improve its transmission properties, impedance properties, or both. Also known as shaping circuit; shaping network. { kə'rek-tiv 'net,wərk }
- correed relay** [ELEC] Hermetically sealed reed capsule surrounded by a coil winding, used as a switching device with telephone equipment. { 'kō,rēd 'rē,lā }
- correlated orientation tracking and range** See cotar. { 'kär-ə,lād-əd ,ōr-ē-ən'tā-shən 'trak-ij ən 'rānj }
- correlation detection** [ENG] A method of detection of aircraft or space vehicles in which a signal is compared, point to point, with an internally generated reference. Also known as cross-correlation detection. { ,kär-ə'lā-shən dī'tek-shən }
- correlation direction finder** [ENG] Satellite station separated from a radar to receive jamming signals; by correlating the signals received from several such stations, range and azimuth of many jammers may be obtained. { ,kär-ə'lā-shən dā'rek-shən ,fīnd-ər }
- correlation distance** [COMMUN] In tropospheric scatter propagation, the minimum spatial separation between antennas which will give rise to independent fading of the received signals. { ,kär-ə'lā-shən ,dis-təns }
- correlation tracking and triangulation** See cotat. { ,kär-ə'lā-shən 'trak-ij ən trī,əŋ ,gyā'lā-shən }
- correlation tracking system** [ENG] A trajectory-measuring system utilizing correlation techniques where signals derived from the same source are correlated to derive the phase difference between the signals. { ,kär-ə'lā-shən 'trak-ij ,sis-təm }
- correlation-type receiver** See correlator. { ,kär-ə'lā-shən ,tīp rī'sē-vər }
- correlator** [ELECTR] A device that detects weak signals in noise by performing an electronic operation approximating the computation of a correlation function. Also known as correlation-type receiver. { 'kär-ə,lād-ər }
- correspondence** See relation. { ,kär-ə'spän-dəns }
- correspondence printer** See letter-quality printer. { ,kär-ə'spän-dəns ,print-ər }
- corrugated conical-horn antenna** [ELECTROMAG] A horn antenna that has a circular cross section and a series of equally spaced ridges protruding from otherwise straight sides. { 'kär-ə,gād-əd ,kän-ə-kəl ,hörn ən'ten-ə }
- corrupt** [COMPUT SCI] To destroy or alter information so that it is no longer reliable. { kə'rəpt }
- coscant antenna** [ELECTROMAG] An antenna that gives a beam whose amplitude varies as the cosecant of the angle of depression below the horizontal; used in navigation radar. { kō'sē ,kant ən'ten-ə }

own as remedial  
edure of repairing  
necessary either by  
individual elements  
proper operating  
an-ans )

electric network  
its transmission  
ties, or both. Also  
shaping network.

cally sealed reed  
winding, used as  
hone equipment.

**d range** See cotar,  
'trak-ij ən 'rānj }  
method of de-  
vehicles in which  
t to point, with  
ence. Also known  
{ ,kär-ə'lā-shən

ENG] Satellite sta-  
receive jamming  
als received from  
d azimuth of many  
{ ,kär-ə'lā-shən

] In tropospheric  
mum spatial  
epich will give rise  
received signals.

**ulation** See cotat,  
,gyə'lā-shən }  
ENG] A trajectory-  
correlation tech-  
l from the same  
re the phase dif-  
{ ,kär-ə'lā-shən

orrelator. { ,kär-

hat detects weak  
ng an electronic  
omputation of a  
vn as correlation-

{ ,kär-ə'spän-

er-quality printer.

**a** [ELECTROMAG]  
lar cross section  
ridges protruding  
{ ,kär-ə,gäd-əd

or alter informa-  
ble. { kə'rəpt }

AG] An antenna  
ude varies as the  
ssion below the  
radar. { kō'sē

**cosecant-squared antenna** [ELECTROMAG] An  
antenna that has a cosecant-squared pattern.  
{ kō'sē,kant [skwəd an'ten-ə }

**cosecant-squared pattern** [ELECTROMAG] A  
ground radar-antenna radiation pattern that  
sends less power to nearby objects than to  
those farther away in the same sector; the field  
intensity varies as the square of the cosecant  
of the elevation angle. { kō'sē,kant [skwəd  
'pad-ən }

**cosine winding** [ELECTR] A winding used in the  
deflection yoke of a cathode-ray tube to prevent  
changes in focus as the beam is deflected over the  
entire area of the screen. { 'kō,sīn ,wīnd-ij }

**cosmic noise** [COMMUN] Radio static caused by  
a phenomenon outside the earth's atmosphere,  
such as sunspots. { 'kōz-mīk 'nōiz }

**cost function** [SYS ENG] In decision theory, a  
loss function which does not depend upon the  
decision rule. { 'kōst ,fəŋk-shən }

**cotar** [ENG] A passive system used for tracking  
a vehicle in space by determining the line of  
direction between a remote ground-based receiv-  
ing antenna and a telemetering transmitter in  
the missile, using phase-comparison techniques.  
Derived from correlated orientation tracking and  
range. { 'kō,tār }

**cotat** [ENG] A trajectory-measuring system using  
several antenna base lines, each separated by  
large distances, to measure direction cosines  
to an object, then the object's space position  
is computed by triangulation. Derived from cor-  
relation tracking and triangulation. { 'kō,tat }

**Cotton balance** [ENG] A device which employs  
a current-carrying conductor of special shape  
to determine the strength of a magnetic field  
{ 'kāt-ən 'bal-əns }

**coul** See coulomb.

**coulomb** [ELEC] A unit of electric charge, defined  
as the amount of electric charge that crosses a  
surface in 1 second when a steady current of 1  
absolute ampere is flowing across the surface;  
this is the absolute coulomb and has been the  
legal standard of quantity of electricity since  
1950; the previous standard was the international  
coulomb, equal to 0.999835 absolute coulomb.  
Abbreviated coul. Symbolized C. { 'kü,lām }

**Coulomb attraction** [ELEC] The electrostatic  
force of attraction exerted by one charged  
particle on another charged particle of opposite  
sign. Also known as electrostatic attraction.  
{ 'kü,lām ə'træk-shən }

**Coulomb field** [ELEC] The electric field created by  
a stationary charged particle. { 'kü,lām ,fēld }

**Coulomb force** [ELEC] The electrostatic force  
of attraction or repulsion exerted by one  
charged particle on another, in accordance with  
Coulomb's law. { 'kü,lām ,fōrs }

**Coulomb Interactions** [ELEC] Interactions of  
charged particles associated with the Coulomb  
forces they exert on one another. Also known

as electrostatic interactions. { 'kü,lām in-tər  
'ak-shənz }

**coulombmeter** [ENG] An instrument that mea-  
sures quantity of electricity in coulombs by  
integrating a stored charge in a circuit which has  
very high input impedance. { 'kü,lām,mēd-ər }

**Coulomb potential** [ELEC] A scalar point function  
equal to the work per unit charge done against the  
Coulomb force in transferring a particle bearing  
an infinitesimal positive charge from infinity to a  
point in the field of a specific charge distribution.  
{ 'kü'lām pə'ten-chəl }

**Coulomb repulsion** [ELEC] The electrostatic  
force of repulsion exerted by one charged  
particle on another charged particle of the same  
sign. Also known as electrostatic repulsion.  
{ 'kü'lām rī'pal-shən }

**Coulomb's law** [ELEC] The law that the attraction  
or repulsion between two electric charges acts  
along the line between them, is proportional to  
the product of their magnitudes, and is inversely  
proportional to the square of the distance  
between them. Also known as law of electrostatic  
attraction. { 'kü'lāmz ,lō }

**Coulomb's theorem** [ELEC] The proposition that  
the intensity of an electric field near the surface  
of a conductor is equal to the surface charge  
density on the nearby conductor surface divided  
by the absolute permittivity of the surrounding  
medium. { 'kü,lāmz ,thīr-əm }

**count cycle** [COMPUT SCI] An increase or decrease  
of the cycle index by unity or by an arbitrary  
integer. { 'kaunt ,sī-kəl }

**countdown** [COMMUN] The ratio of the number of  
interrogation pulses not answered by a transpon-  
der to the total number received. { 'kaunt  
'daun }

**counter** [COMPUT SCI] 1. A register or storage  
location used to represent the number of occur-  
rences of an event. 2. See accumulator; scaler.  
{ 'kaunt-ər }

**counter circuit** See counting circuit. { 'kaunt-ər  
'sər-kət }

**counter coupling** [COMPUT SCI] The technique of  
combining two or more counters into one counter  
of larger capacity in electromechanical devices  
by means of control panel wiring. { 'kaunt-ər  
'kəp-lij }

**counter decade** See decade scaler. { 'kaunt-ər  
'dek,ād }

**counterelectromotive cell** [ELEC] Cell of practi-  
cally no ampere-hour capacity, used to oppose  
the line voltage. { 'kaunt-ər-ī,lek-trō'mōd-iv'sel }

**counter-free machine** [COMPUT SCI] A sequential  
machine that cannot count modulo any integer  
greater than 1. { 'kaunt-ər ,frē mə'shēn }

**counter/frequency meter** [ENG] An instrument that contains a frequency standard and can be used to measure the number of events or the number of cycles of a periodic quantity that occurs in a specified time, or the time between two events. { 'kaunt-ər 'frē-kwən-sē ,mēd-ər }

**countermeasures set** [ELECTR] A complete electronic set specifically designed to provide facilities for intercepting and analyzing electromagnetic energy propagated by transmitter and to provide a source of radio-frequency signals which deprive the enemy of effective use of his electronic equipment. { 'kaunt-ər ,mez-ərz ,set }

**counterpoise** [ELEC] A system of wires or other conductors that is elevated above and insulated from the ground to form a lower system of conductors for an antenna. Also known as antenna counterpoise. { 'kaunt-ər ,pöiz }

**counter tube** [ELECTR] An electron tube having one signal-input electrode and 10 or more output electrodes, with each input pulse serving to transfer conduction sequentially to the next output electrode; beam-switching tubes and cold-cathode counter tubes are examples. { 'kaunt-ər ,tüb }

**counter voltage** [ELEC] The reverse voltage that appears across an inductor when current through the inductor is shut off. { 'kaunt-ər ,völ-tij }

**counting circuit** [ELECTR] A circuit that counts pulses by frequency-dividing techniques, by charging a capacitor in such a way as to produce a voltage proportional to the pulse count, or by other means. Also known as counter circuit. { 'kaunt-ij ,sər-kət }

**counting-down circuit** See frequency divider. { 'kaunt-ij ,daun ,sər-kət }

**counting rate-voltage characteristic** See plateau characteristic. { 'kaunt-ij ,rät 'völ-tij ,kar-ik-tə'ris-tik }

**couple** [ELEC] To connect two circuits so signals are transferred from one to the other. [ELECTR] Two metals placed in contact, as in a thermocouple. { 'kəp-əl }

**coupled antenna** [ELECTROMAG] An antenna electromagnetically coupled to another. { 'kəp-əld an'ten-ə }

**coupled circuits** [ELEC] Two or more electric circuits so arranged that energy can transfer electrically or magnetically from one to another. { 'kəp-əld 'sər-kəts }

**coupled systems** [COMPUT SCI] Computer systems that share equipment and can exchange information. { 'kəp-əld 'sis-təmz }

**coupled transistors** [ELECTR] Transistors connected in series by transformers or resistance-capacitance networks, in much the same manner as electron tubes. { 'kəp-əld tran'zis-tərz }

**coupler** [ELEC] A component used to transfer energy from one circuit to another. [ELECTROMAG] 1. A passage which joins two cavities or wave-

guides, allowing them to exchange energy. 2. A passage which joins the ends of two waveguides, whose cross section changes continuously from that of one to that of the other. { 'kəp-lər }

**coupling** [ELEC] 1. A mutual relation between two circuits that permits energy transfer from one to another, through a wire, resistor, transformer, capacitor, or other device. 2. A hardware device used to make a temporary connection between two wires. { 'kəp-liŋ }

**coupling aperture** [ELECTROMAG] An aperture in the wall of a waveguide or cavity resonator, designed to transfer energy to or from an external circuit. Also known as coupling hole; coupling slot. { 'kəp-liŋ ,ap-ə-čər }

**coupling capacitor** [ELECTR] A capacitor used to block the flow of direct current while allowing alternating or signal current to pass; widely used for joining two circuits or stages. Also known as blocking capacitor; stopping capacitor. { 'kəp-liŋ kə'pas-əd-ər }

**coupling coefficient** [ELECTR] The ratio of the maximum change in energy of an electron traversing an interaction space to the product of the peak alternating gap voltage and the electronic charge. { 'kəp-liŋ ,kō-'fiʃ-ənt }

**coupling hole** See coupling aperture. { 'kəp-liŋ ,höl }

**coupling loop** [ELECTROMAG] A conducting loop projecting into a waveguide or cavity resonator, designed to transfer energy to or from an external circuit. { 'kəp-liŋ ,löp }

**coupling probe** [ELECTROMAG] A probe projecting into a waveguide or cavity resonator, designed to transfer energy to or from an external circuit. { 'kəp-liŋ ,pröb }

**coupling slot** See coupling aperture. { 'kəp-liŋ ,slät }

**course programmer** [CONT SYS] An item which initiates and processes signals in a manner to establish a vehicle in which it is installed along one or more projected courses. { 'kōrs 'prō-gram-ər }

**courseware** [COMPUT SCI] Computer programs designed to be used in computer-aided instruction or computer-managed instruction. { 'kōrs ,wer }

**coverage** [ELECTROMAG] A spatial account of the regions of useful sensitivity in a radar's surroundings that can be affected, for example, by multipath propagation or by obscuring terrain. { 'kəv-riŋ }

**COZI** [COMMUN] An ionospheric sounding system for determining propagation characteristics of the ionosphere at various angles at any instant; used to determine how well long-distance, high-frequency broadcasts are reaching their intended destinations. Derived from communications zone indicator. { 'kōzī }

**CPA** See color-phase alternation.

**CPE** See computer performance evaluation.

**CPM** See critical path method.

**C power supply** [ELECTR] A device connected in the circuit between the cathode and grid of a vacuum tube to apply grid bias. { 'sē 'paʊr sə ,plī }



exchange energy. **2.** A pair of two waveguides, which resonates continuously from the other. { 'kəp-lər }  
 The mathematical relation between energy transfer from one resistor, transformer, etc. **2.** A hardware device that provides a connection between

**»MAG** An aperture in a cavity resonator, or a hole through which energy flows from an external source into the resonating hole; coupling

A capacitor used to store energy in a resonant circuit while allowing it to pass; widely used in the output stages of a vacuum tube or stopping capacitor.

**»** The ratio of the energy of an electron beam to the product of the beam current and the voltage and the distance. { 'kəp-liŋ }

**»** A conducting loop in a cavity resonator, or a hole through which energy flows from an external

A probe projecting from a cavity resonator, designed to receive energy from an external

structure. { 'kəp-liŋ }

**»** An item which is used in a manner to be similar to that of a component installed along the length of a structure. { 'kòrs 'prò }

**»** Computer programs designed to provide a detailed instruction set for a radar's surveillance account of the terrain, by scanning the terrain.

**»** A sounding system whose characteristics are determined at any instant; used to determine distance, height, and other parameters in their intended communications zone.

uation.

connected in a grid of a structure. { 'sē 'paür sə }

**CPU** See central processing unit.

**CPU-bound program** [COMPUT SCI] A computer program that involves a large amount of calculation and internal rearrangement of data, so that the speed of execution depends on the speed of the central processing unit (CPU) and memory. Also known as cycle-bound program, process-bound program. { 'sē,pe'yü 'baünd ,prō-grəm }

**CPU fan** [COMPUT SCI] A fan mounted directly over the integrated-circuit chip containing a computer's central processing unit to prevent overheating. { 'sē,pe'yü 'fan }

**crash** [COMPUT SCI] **1.** A breakdown, hardware failure, or software problem that renders a computer system inoperative. **2.** Seeabend. { 'kræʃ }

**crash locator beacon** [COMMUN] An automatic radio beacon carried in aircraft to guide searching forces in the event of a crash. { 'kræʃ 'lō,kæd-ər ,bē-kən }

**crater lamp** [ELECTR] A glow-discharge tube used as a point source of light whose brightness is proportional to the signal current sent through the tube; used for photographic recording of facsimile signals. { 'kræd-ər ,lamp }

**CRC** See cyclic redundancy check.

**creation operator** [COMPUT SCI] The part of a data structure which allows components to be created. { 'kreë-shən ,öp-ə,ræd-ər }

**credence** [ELECTROMAG] In radar, a measure of confidence in a target detection, generally proportional to target return amplitude. { 'kred-əns }

**creep** [ELECTR] A slow change in a characteristic with time or usage. { 'krēp }

**creepage** [ELEC] The conduction of electricity across the surface of a dielectric. { 'krē-pij }

**crest value** See peak value. { 'krest ,val-yü }

**crest voltmeter** [ELEC] A voltmeter reading the peak value of the voltage applied to its terminals. { 'krest 'völt,mēd-ər }

**crimp contact** [ELEC] A contact whose back portion is a hollow cylinder that will accept a wire; after a bare wire is inserted, a swaging tool is applied to crimp the contact metal firmly against the wire. Also known as solderless contact. { 'krimp ,kän,tækt }

**crippled leap-frog test** [COMPUT SCI] A variation of the leap-frog test, modified so the computer tests are repeated from a single set of storage locations rather than a changing set of locations. { 'krip-əld 'lēp ,fræg ,test }

**crippled mode** [COMPUT SCI] The operation of a computer at reduced capacity when certain parts are not working. { 'krip-əld ,mōd }

**critical anode voltage** [ELECTR] The anode voltage at which breakdown occurs in a gas tube. { 'krid-ə-kəl 'a,nōd ,völt-tij }

**critical area** See picture element. { 'krid-ə-kəl 'er-ē-ə }

**critical coupling** [ELEC] The degree of coupling that provides maximum transfer of signal energy from one radio-frequency resonant circuit to another when both are tuned to the same

frequency. Also known as optimum coupling. { 'krid-ə-kəl 'kəp-liŋ }

**critical field** [ELECTR] The smallest theoretical value of steady magnetic flux density that would prevent an electron emitted from the cathode of a magnetron at zero velocity from reaching the anode. Also known as cutoff field. { 'krid-ə-kəl 'fēld }

**critical frequency** [ELECTR] See cutoff frequency. [ELECTROMAG] The limiting frequency below which a radio wave will be reflected by an ionospheric layer at vertical incidence at a given time. { 'krid-ə-kəl 'frē-kwən-sē }

**critical grid current** [ELECTR] Instantaneous value of grid current when the anode current starts to flow in a gas-filled vacuum tube. { 'krid-ə-kəl 'grid ,kər-ənt }

**critical grid voltage** [ELECTR] The grid voltage at which anode current starts to flow in a gas tube. Also known as firing point. { 'krid-ə-kəl 'grid ,völt-tij }

**critical path method** [SYS ENG] A systematic procedure for detailed project planning and control. Abbreviated CPM. { 'krid-ə-kəl 'path ,meth-əd }

**critical potential** [ELEC] A potential which results in sudden change in magnitude of the current. { 'krid-ə-kəl pə'ten-chəl }

**critical voltage** [ELECTR] The highest theoretical value of steady anode voltage, at a given steady magnetic flux density, at which electrons emitted from the cathode of a magnetron at zero velocity would fail to reach the anode. Also known as cutoff voltage. { 'krid-ə-kəl 'völt-tij }

**critical wavelength** [COMMUN] The free-space wavelength corresponding to the critical frequency. { 'krid-ə-kəl 'wäv ,leŋkth }

**CR law** [ELEC] A law which states that when a constant electromotive force is applied to a circuit consisting of a resistor and capacitor connected in series, the time taken for the potential on the plates of the capacitor to rise to any given fraction of its final value depends only on the product of capacitance and resistance. { 'sē 'kr ,lō }

**CRO** See cathode-ray oscilloscope.

**crocodile** [ELEC] A unit of potential difference or electromotive force, equal to  $10^6$  volts; used informally at some nuclear physics laboratories. { 'kräk-ə,dīl }

**crocodile clip** See alligator clip. { 'kräk-ə,dīl ,klip }

**CROM** See control and read-only memory. { 'sē ,räm }

**Crookes dark space** See cathode dark space. { 'krüks 'dærk ,spās }

**Crookes tube** [ELECTR] An early form of low-pressure discharge tube whose cathode was a flat aluminum disk at one end of the tube, and whose anode was a wire at one side of the tube, outside the electron stream; used to study cathode rays. { 'krüks ,tüb }

**cross antenna** [ELECTROMAG] An array of two or more horizontal antennas connected to a single feed line and arranged in the pattern of a cross. { 'kròs an,tēn-ə }

## cross assembler

- cross assembler** [COMPUT SCI] An assembly program that allows a computer program written on one type of computer to be used on another type. { 'krɒs ə,sem-blər }
- crossbar switch** [ELEC] A switch having a three-dimensional arrangement of contacts and a magnet system that selects individual contacts according to their coordinates in the matrix. { 'krɒs,bər,swɪtʃ }
- crossbar system** [COMMUN] Automatic telephone switching system which is generally characterized by the following features: selecting mechanisms are crossbar switches, common circuits select and test the switching paths and control the operation of the selecting mechanisms, and method of operations is one in which the switching information is received and stored by controlling mechanisms that determine the operations necessary in establishing a telephone connection; largely replaced by electronic switching systems using digital switching techniques. { 'krɒs,bər,sɪs-təm }
- cross-color** [ELECTR] In analog color television, the interference in the receiver chrominance channel caused by cross talk from monochrome signals. { 'krɒs,kəl-ər }
- cross compiler** [COMPUT SCI] A compiler that allows a computer program written on one type of computer to be used on another type. { 'krɒs kəm,pɪ-lər }
- cross-correlation detection** See correlation detection. { 'krɒs kār-ə'lā-shən dɪ'tek-shən }
- cross-correlation function** [COMMUN] A function,  $\phi_{12}(\tau)$ , where  $\tau$  is a time-delay parameter, equal to the limit, as  $T$  approaches infinity, of the reciprocal of  $2T$  times the integral over  $t$  from  $-T$  to  $T$  of  $f_1(t)f_2(t-\tau)$ , where  $f_1$  and  $f_2$  are functions of time, such as the input and output of a communication system. { 'krɒs kār-ə'lā-shən fʌŋk-shən }
- cross-correlator** [ELECTR] A correlator in which a locally generated reference signal is multiplied by the incoming signal and the result is smoothed in a low-pass filter to give an approximate computation of the cross-correlation function. Also known as synchronous detector. { 'krɒs'kār-ə'lād-ər }
- cross-coupling** [COMMUN] A measure of the undesired power transferred from one channel to another in a transmission medium. { 'krɒs 'kɒp-lɪŋ }
- crossed-field amplifier** [ELECTR] A forward-wave, beam-type microwave amplifier that uses crossed-field interaction to achieve good phase stability, high efficiency, high gain, and wide bandwidth for most of the microwave spectrum. { 'krɒst, fɛld 'am-plɪ-faɪ-ər }
- crossed-field backward-wave oscillator** [ELECTR] One of several types of backward-wave oscillators that utilize a crossed field, such as the amplitron and carcinotron. { 'krɒst, fɛld 'bæk,wərd, wāv 'ɔs-ə,lād-ər }
- crossed-field device** [ELECTR] Any instrument which uses the motion of electrons in perpendicular electric and magnetic fields to generate microwave radiation, either as an amplifier or oscillator. { 'krɒst, fɛld dɪ'vɪs }
- crossed-field multiplier phototube** [ELECTR] A multiplier phototube in which repeated secondary emission is obtained from a single active electrode by the combined effects of a strong radio-frequency electric field and a perpendicular direct-current magnetic field. { 'krɒst, fɛld, mʌl-tə,plɪ-ər 'fɒd-ð,tüb }
- crossed-field tubes** [ELECTR] Vacuum tubes often used in radar transmitters, either as oscillators or as amplifiers, in which the electrons leaving the cathode surface travel in a plasma to the anode in paths determined by the crossed electric and magnetic bias fields applied to the tube, so that the density of the plasma can be easily affected by the electromagnetic signal with which the electrons are interacting. { 'krɒst, fɛld, tʉbz }
- cross-fade** [ENG ACOUS] In dubbing, the overlapping of two sound tracks, wherein the outgoing track fades out while the incoming track fades in. { 'krɒs, fād }
- cross fire** [COMMUN] Interfering current in one telegraph or signaling channel resulting from telegraph or signaling currents in another channel. { 'krɒs, fɪr }
- crossfoot** [COMPUT SCI] To add numbers in several different ways in a computer, for checking purposes. { 'krɒs, fʉt }
- crosshatch generator** [ELECTR] A signal generator that generates a crosshatch pattern for adjusting a video display device. { 'krɒs,hætʃ, ʒen-ə,rād-ər }
- cross modulation** [COMMUN] A type of interference in which the carrier of a desired signal becomes modulated by the program of an undesired signal on a different carrier frequency; the program of the undesired station is then heard in the background of the desired program. { 'krɒs, mæj-ə'lā-shən }
- cross-neutralization** [ELECTR] Method of neutralization used in push-pull amplifiers, whereby a portion of the plate-cathode alternating-current voltage of each vacuum tube is applied to the grid-cathode circuit of the other vacuum tube through a neutralizing capacitor. { 'krɒs, nū-trə-lə'zā-shən }
- cross office switching time** [COMMUN] Time required to connect any input through the switching center to any selected output. { 'krɒs, ɔf-əs 'swɪtʃ-ɪŋ, tɪm }
- crossover** [ELEC] A point at which two conductors cross, with appropriate insulation between them to prevent contact. [ELECTR] The plane at which the cross section of a beam of electrons in an electron gun is a minimum. { 'krɒs, ɔ-vər }
- crossover distortion** [ELECTR] Amplitude distortion in a class B transistor power amplifier which occurs at low values of current, when input

as an amplifier or s)

**otube** [ELECTR] A ich repeated sec- rom a single active ffects of a strong and a perpendicu- id. { 'kröst, fejd }

vacuum tubes of- s, either as oscil- ich the electrons vel in a plasma ed by the crossed s the plasma can omagnetic signal racting. { 'kröst }

ing, the overlap- in the outgoing ng track fades in.

current in one resulting from n another chan-

umbers in sev- ar, for checking

A signal gener- ch pattern for { 'krös, hach }

pe of interfer- desired signal ogram of an rier frequency; ation is then ired program.

hod of neu- fiers, whereby alternating- be is applied other vacuum itor { 'krös }

UN] Time re- h the switch- { 'krös, öf-ös }

two conduc- ion between The plane at electrons in rös, ö-vär ) tude distor- lifier which when input

impedance becomes appreciable compared with driver impedance. { 'krös, ö-vär dis'tör-shön }

**crossover frequency** [ENG ACOUS] 1. The fre- quency at which a dividing network delivers equal power to the upper and lower frequency channels when both are terminated in specified loads. 2. See transition frequency. { 'krös, ö-vär ,frē-kwän-sē }

**crossover network** [ENG ACOUS] A selective net- work used to divide the audio-frequency output of an amplifier into two or more bands of frequencies. Also known as dividing network; loudspeaker dividing network. { 'krös, ö-vär ,net ,wörk }

**crossover voltage** [ELECTR] In a cathode-ray stor- age tube, the voltage of a secondary writing surface with respect to cathode voltage, on which the secondary emission is unity. { 'krös, ö-vär ,völ-tij }

**cross-platform computing** [COMPUT SCI] The use of very similar user interfaces for versions of programs running on different operating systems and computer architectures. { ,krös 'plat,form kəm'pyüd-ij }

**cross-referencing program** [COMPUT SCI] A com- puter program used in debugging that produces indexed lists of both the variable names and the statement numbers of the source program. { 'krös 'ref-rəns-ij ,prō-gram }

**crosstalk** [COMMUN] 1. The sound heard in a receiver along with a desired program because of cross modulation or other undesired coupling to another communication channel; it is also observed between adjacent pairs in a telephone cable. 2. Interaction of audio and video sig- nals in an analog television system, causing video modulation of the audio carrier or audio modulation of the video signal at some point. 3. Interaction of the chrominance and luminance signals in an analog color television receiver. [ELECTR] See magnetic printing. { 'krös, tók }

**crosstalk coupling** [COMMUN] The cross cou- pling between speech communications channels or their component parts. Also known as crosstalk loss. { 'krös, tók ,kəp-lij }

**crosstalk level** [COMMUN] Volume of crosstalk energy, measured in decibels, referred to a reference level. { 'krös, tók ,lev-əl }

**crosstalk loss** See crosstalk coupling. { 'krös, tók ,lós }

**crosstalk unit** [COMMUN] A measure of the cou- pling between two circuits; the number of crosstalk units is 1 million times the ratio of the current or voltage at the observing point to the current or voltage at the origin of the disturbing signal, the impedances at these points being equal. Abbreviated cu. { 'krös, tók ,yü-nät }

**crowbar** [ELEC] A device or action that in effect places a high overload on the actuating element of a circuit breaker or other protective device, thus triggering it. { 'krö, bär }

**crowbar voltage protector** [ELEC] A separate cir- cuit which monitors the output of a regulated power supply and instantaneously throws a short circuit (or crowbar) across the output terminals

of the power supply whenever a preset voltage limit is exceeded. { 'krö, bär 'völ-tij prät'ek-tär }

**crown cell** [ELEC] The generic name for alkaline zinc-manganese dioxide dry-cell battery; man- ganese dioxide-graphite cathode mix is pressed into a steel can onto which a steel cap is spot- welded to contain the amalgamated powdered- zinc anode. { 'kraün, sel }

**CRT** See cathode-ray tube.

**cruciform core** [ELEC] A transformer core in which all windings are on one center leg, and four additional legs arranged in the form of a cross serve as return paths for magnetic flux. { 'krü-sə ,förm ,kör }

**cryoelectronics** [ELECTR] A branch of electronics concerned with the study and application of su- perconductivity and other low-temperature phe- nomena to electronic devices and systems. Also known as cryoelectronics. { 'krī-ö-i, lek 'trän-iks }

**cryogenic engineering** [ENG] A branch of engi- neering specializing in technical operations at very low temperatures (about 200 to 400°R, or -160 to -50°C). { ,krī-ə'jen-ik en-jə'nir-ij }

**cryogenic film** [COMPUT SCI] A storage element using superconducting thin films of lead at liquid-helium temperature. { ,krī-ə'jen-ik 'film }

**cryogenic transformer** [ELECTR] A transformer designed to operate in digital cryogenic cir- cuits, such as a controlled-coupling transformer. { ,krī-ə'jen-ik tranz'förm-ər }

**cryoelectronics** See cryoelectronics. { 'krī-ö-i, lek 'trän-iks }

**cryoresistive transmission line** [ELEC] An elec- tric power transmission line whose conducting cables are cooled to the temperature of liquid nitrogen, 77 K (-196°C), resulting in a reduction of the resistance of the conductor by a factor of approximately 10, leading to increased transmis- sion capacity. { 'krī-ö-i'zis-tiv tranz'mish-ən ,lin }

**cryosar** [ELECTR] A cryogenic, two-terminal, negative-resistance semiconductor device, consisting essentially of two contacts on a germanium wafer operating in liquid helium. { 'krī-ö, sār }

**cryosistor** [ELECTR] A cryogenic semiconductor device in which a reverse-biased pn junction is used to control the ionization between two ohmic contacts. { 'krī-ə'zis-tər }

**cryotron** [ELECTR] A switch that operates at very low temperatures at which its components are superconducting; when current is sent through a control element to produce a magnetic field, a gate element changes from a superconductive zero-resistance state to its normal resistive state. { 'krī-ə, trän }

**cryotronics** [ELECTR] The branch of electronics that deals with the design, construction, and use of cryogenic devices. { ,krī-ə'trän-iks }

**cryptanalysis** [COMMUN] Steps and operations performed in converting encrypted messages into plain text without previous knowledge of the key employed. { ,krip-tə'nal-ə-səs }

**cryptochannel** [COMMUN] A complete system of communication that uses electronic

## cryptogram

- encryption and decryption equipment and has two or more radio or wire terminals. { 'krip-tō'chan-əl }
- cryptogram** [COMMUN] Information written in code or cipher. { 'krip-tō,gram }
- cryptographic algorithm** [COMMUN] An unchanging set of rules or steps for enciphering and deciphering messages in a cipher system. { 'krip-tō,graf-ik 'al-gō,rith-əm }
- cryptographic bitstream** [COMMUN] An unending sequence of digits which is combined with ciphertext to produce plaintext or with plaintext to recover ciphertext in a stream cipher system. { 'krip-tō,graf-ik 'bit,strēm }
- cryptographic key** [COMMUN] A sequence of numbers or characters selected by the user of a cipher system to implement a cryptographic algorithm for enciphering and deciphering messages. Also known as key. { 'krip-tō,graf-ik 'kē }
- cryptography** [COMMUN] The science of preparing messages in a form which cannot be read by those not privy to the secrets of the form. { 'krip-tō,grə-fē }
- cryptology** [COMMUN] The science of preparing messages in forms which are intended to be unintelligible to those not privy to the secrets of the form, and of deciphering such messages. { 'krip-tō-lə-jē }
- cryptopart** [COMMUN] One of several portions of a cryptotext; each cryptopart bears a different message indicator. { 'krip-tō,pärt }
- cryptotext** [COMMUN] In cryptology, a text of visible writing which conveys no intelligible meaning in any language, or which apparently conveys an intelligible meaning that is not the real meaning. { 'krip-tō,tekst }
- crystal** [ELECTR] A natural or synthetic piezoelectric or semiconductor material whose atoms are arranged with some degree of geometric regularity. { 'krist-əl }
- crystal activity** [ELECTR] A measure of the amplitude of vibration of a piezoelectric crystal plate under specified conditions. { 'krist-əl ək 'tiv-əd-ē }
- crystal-audio receiver** [ELECTR] Similar to the crystal-video receiver, except for the path detection bandwidth which is audio rather than video. { 'krist-əl 'd-ē-ō ri'sē-vər }
- crystal blank** [ELECTR] The result of the final cutting operation on a piezoelectric or semiconductor crystal. { 'krist-əl ,blæŋk }
- crystal calibrator** [ELECTR] A crystal-controlled oscillator used as a reference standard to check frequencies. { 'krist-əl 'kal-ə,brād-ər }
- crystal cartridge** [ENG ACOUS] A piezoelectric unit used with a stylus in a phonograph pickup to convert disk recordings into audio-frequency signals, or used with a diaphragm in a crystal microphone to convert sound waves into af signals. { 'krist-əl 'kār,triŋ }
- crystal control** [ELECTR] Control of the frequency of an oscillator by means of a quartz crystal unit. { 'krist-əl kən'trōl }
- crystal-controlled oscillator** [ELECTR] An oscillator whose frequency of operation is controlled by a crystal unit. { 'krist-əl kən'trōld 'äs-ə ,lād-ər }
- crystal-controlled transmitter** [ELECTR] A transmitter whose carrier frequency is directly controlled by the electromechanical characteristics of a quartz crystal unit. { 'krist-əl kən'trōld 'tranz ,mid-ər }
- crystal current** [ELECTR] The actual alternating current flowing through a crystal unit. { 'krist-əl ,kər-ənt }
- crystal cutter** [ENG ACOUS] A cutter in which the mechanical displacements of the recording stylus are derived from the deformations of a crystal having piezoelectric properties. { 'krist-əl ,kəd-ər }
- crystal detector** [ELECTR] 1. A crystal used to rectify a modulated radio-frequency signal to obtain the audio or video signal directly. 2. A crystal diode used in a microwave receiver to combine an incoming radio-frequency signal with a local oscillator signal to produce an intermediate-frequency signal. { 'krist-əl di'tek-tər }
- crystal diode** See semiconductor diode. { 'krist-əl 'dī,ōd }
- crystal filter** [ELECTR] A highly selective tuned circuit employing one or more quartz crystals; sometimes used in intermediate-frequency amplifiers of communication receivers to improve the selectivity. { 'krist-əl 'fil-tər }
- crystal harmonic generator** [ELECTR] A type of crystal-controlled oscillator which produces an output rich in harmonics (overtones or multiples) of its fundamental frequency. { 'krist-əl har 'mān-ik 'jen-ə,rād-ər }
- crystal headphones** [ENG ACOUS] Headphones using Rochelle salt or other crystal elements to convert audio-frequency signals into sound waves. Also known as ceramic earphones. { 'krist-əl 'hed,fōnz }
- crystal-lattice filter** [ELECTR] A crystal filter that uses two matched pairs of series crystals and a higher-frequency matched pair of shunt or lattice crystals. { 'krist-əl 'lad-əs ,fil-tər }
- crystal loudspeaker** [ENG ACOUS] A loudspeaker in which movements of the diaphragm are produced by a piezoelectric crystal unit that twists or bends under the influence of the applied audio-frequency signal voltage. Also known as piezoelectric loudspeaker. { 'krist-əl 'laüd,spēk-ər }
- crystal microphone** [ENG ACOUS] A microphone in which deformation of a piezoelectric bar by the action of sound waves or mechanical vibrations generates the output voltage between the faces of the bar. Also known as piezoelectric microphone. { 'krist-əl 'mī-krə,fōn }
- crystal mixer** [ELECTR] A mixer that uses the nonlinear characteristic of a crystal diode to mix two frequencies; widely used in radar receivers to convert the received radar signal to a lower intermediate-frequency value by mixing it with a local oscillator signal. { 'krist-əl 'mik-sər }
- crystal operation** [ELECTR] Operation using crystal-controlled oscillators. { 'krist-əl 'öp-ə ,rā-shən }

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**crystal oscillator** [ELECTR] An oscillator in which  
the frequency of the alternating-current output  
is determined by the mechanical properties of a  
piezoelectric crystal. Also known as piezoelectric  
oscillator. ('krist-əl 'äs-ə,läd-ər }

**crystal plate** [ELECTR] A precisely cut slab of  
quartz crystal that has been lapped to final  
dimensions, etched to improve stability and  
efficiency, and coated with metal on its major  
surfaces for connecting purposes. Also known as  
quartz plate. ('krist-əl,plät }

**crystal rectifier** See semiconductor diode.  
{ ('krist-əl 'rek-ta,fi-ər }

**crystal resonator** [ELECTR] A precisely cut piezo-  
electric crystal whose natural frequency of vibra-  
tion is used to control or stabilize the frequency  
of an oscillator. Also known as piezoelectric  
resonator. ('krist-əl 'rez-ən,äd-ər }

**crystal set** [ELECTR] A radio receiver having a  
crystal detector stage for demodulation of  
the received signals, but no amplifier stages.  
'krist-əl ,set }

**crystal-stabilized transmitter** [ELECTR] A trans-  
mitter employing automatic frequency control, in  
which the reference frequency is that of a crystal  
oscillator. ('krist-əl 'stä-ba,läz 'tranz,mid-ər }

**crystal transducer** [ELECTR] A transducer in  
which a piezoelectric crystal serves as the sensing  
element. ('krist-əl tranz'dü-sər }

**crystal unit** [ELECTR] A complete assembly of  
one or more quartz plates in a crystal holder.  
{ ('krist-əl 'yü-not }

**crystal video receiver** [ELECTR] A broad-tuning  
radar or other microwave receiver consisting  
only of a crystal detector and a video or audio  
amplifier. ('krist-əl 'vid-ē-ō ri'sē-vər }

**crystal video rectifier** [ELECTR] A crystal rectifier  
transforming a high-frequency signal directly  
into a video-frequency signal. ('krist-əl 'vid-ē-ō  
'rek-ta,fi-ər }

**C-scan** See C-display. ('sē ,skan }

**C-scope** See C-display. ('sē ,sköp }

**CSMA/CD** [COMPUT SCI] A method of controlling  
multiaccess computer networks in which each  
station on the network senses traffic and waits  
for it to clear before sending a message, and  
two devices that try to send concurrent messages  
must both step back and try again. Abbreviation  
for carrier-sense multiple access with collision  
detection.

**CSP** See control switching point.

**CSSB system** See companded single-sideband  
system. ('sē ,es,es;bē ,sis-təm }

**CSW** See channel status word.

**CT** See center tap; computerized tomography.

**cu** See crosstalk unit.

**cubical antenna** [ELECTROMAG] An antenna array,  
the elements of which are positioned to form a  
cube. ('kyü-bə-käl an'ten-ə }

**cubicle** [ENG] An enclosure for high-voltage  
equipment. ('kyü-bə-käl }

**Cuccia coupler** See electron coupler. ('kü-chē-ə  
'küp-lər }

**cue circuit** [ELECTR] A one-way communication  
circuit used to convey program control informa-  
tion. ('kyü ,sar-kät }

**cumulative compound generator** [ELEC] A com-  
pound generator in which the series field is  
connected to aid the shunt field magnetomo-  
tive force. ('kyü-myä-lad-iv ,käm,päund 'jen-ə  
,räd-ər }

**cumulative ionization** See avalanche. ('kyü-myä-  
lad-iv ,i-än-ə'zä-shən }

**cup electrometer** [ENG] An electrometer that has  
a metal cup attached to its plate so that a  
charged body touching the inside of the cup gives  
up its entire charge to the instrument. ('küp  
,i,lek'träm-əd-ər }

**Curle balance** [ENG] An instrument for deter-  
mining the susceptibility of weakly magnetic  
materials, in which the deflection produced by a  
strong permanent magnet on a suspended tube  
containing the specimen is measured. ('kyür-ē  
,bal-əns }

**current** [ELEC] The net transfer of electric charge  
per unit time; a specialization of the physics definition.  
Also known as electric current. ('kär-ənt }

**current amplification** [ELECTR] The ratio of  
output-signal current to input-signal current  
for an electron tube, transistor, or magnetic  
amplifier, the multiplier section of a multiplier  
phototube, or any other amplifying device;  
often expressed in decibels by multiplying the  
common logarithm of the ratio by 20. ('kär-ənt  
äm-plä-fä'käs-hən }

**current amplifier** [ELECTR] An amplifier capable  
of delivering considerably more signal current  
than is fed in. ('kär-ənt ,äm-plä,fi-ər }

**current antinode** [ELEC] A point at which current  
is a maximum along a transmission line, antenna,  
or other circuit element having standing waves.  
Also known as current loop. ('kär-ənt 'an-tə  
,nöd }

**current attenuation** [ELECTR] The ratio of input-  
signal current for a transducer to the current  
in a specified load impedance connected to  
the transducer, often expressed in decibels.  
'kär-ənt ə,ten-yə'wä-shən }

**current awareness system** [COMPUT SCI] A sys-  
tem for notifying users on a periodic basis of  
the acquisition, by a central file or library, of  
information (usually literature) which should be  
of interest to the user. ('kär-ənt ə'wer-nəs  
,sis-təm }

**current balance** [ELEC] An apparatus with which  
force is measured between current-carrying con-  
ductors, with the purpose of assigning the value  
of the ampere. Also known as ampere balance.  
'kär-ənt ,bal-əns }

**current-carrying capacity** [ELEC] The maximum  
current that can be continuously carried without  
causing permanent deterioration of electrical or  
mechanical properties of a device or conductor.  
'kär-ənt ,kär-ē-ij kə'pas-əd-ē }

## current cell

**current cell** See active cell. { 'kər-ənt 'sel }

**current collector** See charge collector. { 'kər-ənt kə'lek-tər }

**current comparator** [ELEC] An instrument for determining the ratio of two direct or alternating currents, based on Ampère's laws, in which the two currents are passed through a toroid by two windings of known numbers of turns and the ampere-turn unbalance is measured by a detection winding. { 'kər-ənt kəm,par-əd-ər }

**current-controlled switch** [ELECTR] A semiconductor device in which the controlling bias sets the resistance at either a very high or very low value, corresponding to the "off" and "on" conditions of a switch. { 'kər-ənt kən,trəld 'swich }

**current density** [ELEC] The current per unit cross-sectional area of a conductor; a specialization of the physics definition. Also known as electric current density. { 'kər-ənt ,den-səd-ē }

**current divider** [ELEC] A device used to deliver a desired fraction of a total current to a circuit. { 'kər-ənt di,vīd-ər }

**current drain** [ELEC] The current taken from a voltage source by a load. Also known as drain. { 'kər-ənt ,drän }

**current-equalizing reactor** [ELEC] A reactor that is used to achieve a desired division of current between several circuits operating in parallel. { 'kər-ənt ,ē-kwə'li:z-iŋ rē'ak-tər }

**current feed** [ELECTR] Feed to a point where current is a maximum, as at the center of a half-wave antenna. { 'kər-ənt ,fēd }

**current feedback** [ELECTR] Feedback introduced in series with the input circuit of an amplifier. { 'kər-ənt ,fēd,bak }

**current feedback circuit** [ELECTR] A circuit used to eliminate effects of amplifier gain instability in an indirect-acting recording instrument, in which the voltage input (error signal) to an amplifier is the difference between the measured quantity and the voltage drop across a resistor. { 'kər-ənt ,fēd,bak ,sər-kət }

**current gain** [ELECTR] The fraction of the current flowing into the emitter of a transistor which flows through the base region and out the collector. { 'kər-ənt ,gān }

**current generator** [ELECTR] A two-terminal circuit element whose terminal current is independent of the voltage between its terminals. { 'kər-ənt ,jen-ə,rād-ər }

**current hogging** [ELECTR] A condition in which the largest fraction of a current passes through one of several parallel logic circuits because it has a lower resistance than the others. { 'kər-ənt ,häg-iŋ }

**current-instruction register** See instruction register. { 'kər-ənt in'strək-shən ,rej-ə-stər }

**current intensity** [ELEC] The magnitude of an electric current. Also known as current strength. { 'kər-ənt in'ten-səd-ē }

**current interrupter** [ELEC] Mechanism connected into a current-carrying line to periodically interrupt current flow to allow no-current tests of system components. { 'kər-ənt in-tə'rəp-tər }

**current limiter** [ELECTR] A device that restricts the flow of current to a certain amount, regardless of applied voltage. Also known as demand limiter. { 'kər-ənt ,lim-əd-ər }

**current-limiting reactor** See series reactor. { 'kər-ənt ,lim-əd-iŋ rē'ak-tər }

**current-limiting resistor** [ELEC] A resistor inserted in an electric circuit to limit the flow of current to some predetermined value; used chiefly to protect tubes and other components during warm-up. { 'kər-ənt ,lim-əd-iŋ ri'zīst-ər }

**current location reference** [COMPUT SCI] A symbolic expression, such as a star, which indicates the current location reached by the program; a transfer to \* + 2 would bring control to the second statement after the current statement. { 'kər-ənt lō'kā-shən ,ref-rəns }

**current loop** See current antinode. { 'kər-ənt ,lūp }

**current margin** [COMMUN] Difference between the steady-state currents flowing through a telegraph receiving instrument corresponding respectively to the two positions of the telegraph transmitter. { 'kər-ənt ,mār-jən }

**current measurement** [ELEC] The measurement of the flow of electric current. { 'kər-ənt ,mez-ər-mənt }

**current meter** See ammeter; velocity-type flowmeter. { 'kər-ənt ,mēd-ər }

**current mirror** [ELECTR] An electronic circuit that generates, at a high-impedance output node, an inflowing or outflowing current that is a scaled replica of an input current flowing into or out of a low-impedance input node. { 'kər-ənt ,mir-ər }

**current-mode filter** [ELECTR] An integrated-circuit filter in which the signals are represented by current levels rather than voltage levels. { 'kər-ənt ,mōd ,fil-tər }

**current-mode logic** [ELECTR] Integrated-circuit logic in which transistors are paralleled so as to eliminate current hogging. Abbreviated CML. { 'kər-ənt ,mōd 'ləj-ik }

**current node** [ELEC] A point at which current is zero along a transmission line, antenna, or other circuit element having standing waves. { 'kər-ənt ,nōd }

**current noise** [ELECTR] Electrical noise of uncertain origin which is observed in certain resistances when a direct current is present, and which increases with the square of this current. { 'kər-ənt ,noiz }

**current phasor** [ELEC] A line referenced to a point, whose length and angle represent the magnitude and phase of a current. { 'kər-ənt ,fā-zər }

**current regulator** [ELECTR] A device that maintains the output current of a voltage source at a predetermined, essentially constant value despite changes in load impedance. { 'kər-ənt ,reg-yə,lād-ər }

**current relay** [ELEC] A relay that operates at a specified current value rather than at a specified voltage value. { 'kər-ənt ,rē,lā }

**current saturation** See anode saturation. { 'kər-ənt sətʃ-ə'rā-shən }

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**current source** [ELECTR] An electronic circuit that generates a constant direct current into or out of a high-impedance output node. ('kər-ənt 'sɔrs)

**current strength** See current intensity. ('kər-ənt 'stregkθ)

**current tap** See multiple lamp holder; plug adapter lamp holder. ('kər-ənt, 'tæp)

**current transformer** [ELEC] An instrument transformer intended to have its primary winding connected in series with a circuit carrying the current to be measured or controlled; the current is measured across the secondary winding. ('kər-ənt tranz'fɔr-mər)

**current-transformer phase angle** [ELEC] Angle between the primary current vector and the secondary current vector reversed; it is conventionally considered as positive when the reversed secondary current vector leads the primary current vector. ('kər-ənt tranz'fɔr-mər 'fāz, 'æŋ-gəl)

**current-voltage dual** [ELEC] A circuit which is equivalent to a specified circuit when one replaces quantities with dual quantities; current and voltage impedance and admittance, and meshes and nodes are examples of dual quantities. ('kər-ənt, 'vɔl-tij 'djuəl)

**cursor** [COMPUT SCI] A movable spot of light that appears on the screen of a visual display terminal and can be positioned horizontally and vertically through keyboard controls to instruct the computer at what point a change is to be made. ('kər-sər)

**cursor arrows** [COMPUT SCI] Arrows marked on keys of a computer keyboard that control the movement of the cursor. ('kər-sər, 'ar-ɔz)

**curtain array** [ELECTROMAG] An antenna array consisting of vertical wire elements stretched between two suspension cables. ('kər-tən ə'rā)

**curtain rhombic antenna** [ELECTROMAG] A multiple-wire rhombic antenna having a constant input impedance over a wide frequency range; two or more conductors join at the feed and terminating ends but are spaced apart vertically from 1 to 5 feet (30 to 150 centimeters) at the side poles. ('kər-tən 'rām-bik an'ten-ə)

**curvature effect** [ELECTR] Generally, the condition in which the dielectric strength of a liquid or vacuum separating two electrodes is higher for electrodes of smaller radius of curvature. ('kər-və-çər i'fekt)

**curve follower** [COMPUT SCI] A device in which a photoelectric, capacitive or inductive pick-off guided by a servomechanism reads data in the form of a graph, such as a curve drawn on paper with suitable ink. Also known as graph follower. ('kərv, 'fāl-ə-wɔr)

**curve tracer** [ENG] An instrument that can produce a display of one voltage or current as a function of another voltage or current, with a third voltage or current as a parameter. ('kərv, 'trā-sər)

**custom-designed device** [ELECTR] An integrated logic circuit element that is generated

by a series of steps resembling photographic development from highly complicated artwork patterns. ('kəs-təm də'zɪnd di'vɪs)

**customer substation** [ELEC] A distribution substation located on the premises of a larger customer, such as a shopping center, commercial building, or industrial plant. ('kəs-tə-mər 'səb, 'stā-shən)

**cut and paste** [COMPUT SCI] An editing function of a word processing system in which a portion of text is marked with a particular character at the beginning and at the end and is then copied to another location within the text. Also known as block move. ('kət ən 'pæst)

**cut constraint** [SYS ENG] A condition sometimes imposed in an integer programming problem which excludes parts of the feasible solution space without excluding any integer points. ('kət kən'strænt)

**CUT emulation** See control unit terminal emulation. ('kət, 'em-yo, 'lā-shən)

**cut form** [COMPUT SCI] In optical character recognition, any document form, receipt, or such, of standard dimensions which must be issued a separate read command in order to be recognized. ('kət, 'fɔrm)

**cut-in** [CONT SYS] A value of temperature or pressure at which a control circuit closes. [ELEC] An electrical device that allows current to flow through an electric circuit. ('kət, 'ɪn)

**cut-in angle** [ELECTR] The phase angle at which a semiconductor diode begins to conduct; it is slightly greater than 0° because the diode requires some forward bias to conduct. ('kət, 'ɪn, 'æŋ-gəl)

**Cutler feed** [ELECTROMAG] A resonant cavity that transfers radio-frequency energy from the end of a waveguide to the reflector of a radar spinner assembly. ('kət-lər, 'fi:d)

**cut methods** [SYS ENG] Methods of solving integer programming problems that employ cut constraints derived from the original problem. ('kət, 'meth-ə,)

**cutoff** [ELECTR] 1. The minimum value of bias voltage, for a given combination of supply voltages, that just stops output current in an electron tube, transistor, or other active device. 2. See cutoff frequency. ('kət, 'ɔf)

**cutoff bias** [ELECTR] The direct-current bias voltage that must be applied to the grid of an electron tube to stop the flow of anode current. ('kət, 'ɔf, 'bɪ-əs)

**cutoff field** See critical field. ('kət, 'ɔf, 'fi:ld)

**cutoff frequency** [ELECTR] A frequency at which the attenuation of a device begins to increase sharply, such as the limiting frequency below which a traveling wave in a given mode cannot be maintained in a waveguide, or the frequency above which an electron tube loses efficiency rapidly. Also known as critical frequency; cutoff. ('kət, 'ɔf, 'frē-kwən-sē)

**cutoff limiting** [ELECTR] Limiting the maximum output voltage of a vacuum tube circuit by driving the grid beyond cutoff. ('kət, 'ɔf, 'lim-əd-ɪŋ)

## cutoff voltage

- cutoff voltage** [ELECTR] 1. The electrode voltage value that reduces the dependent variable of an electron-tube characteristic to a specified low value. 2. See critical voltage. { 'kət, ɒf, vɒl-tij }
- cutoff wavelength** [ELECTROMAG] 1. The ratio of the velocity of electromagnetic waves in free space to the cutoff frequency in a uniconductor waveguide. 2. The wavelength corresponding to the cutoff frequency. { 'kət, ɒf 'wæv ,leŋkθ }
- cut-out** [CONT SYS] A value of temperature or pressure at which a control circuit opens. { 'kət ,aʊt }
- cutout** [ELEC] 1. Pairs brought out of a cable and terminated at some place other than at the end of the cable. 2. An electrical device that is used to interrupt the flow of current through any particular apparatus or instrument, either automatically or manually. Also known as electric cutout. { 'kət, aʊt }
- cutout angle** [ELECTR] The phase angle at which a semiconductor diode ceases to conduct; it is slightly less than 180° because the diode requires some forward bias to conduct. { 'kət ,aʊt ,æŋ-gəl }
- cutout box** [ELEC] A fireproof cabinet or box with one or more hinged doors that contains fuses and switches for various leads in an electrical wiring system. Also known as fuse box. { 'kət ,aʊt ,bɒks }
- cut-set** [ELEC] A set of branches of a network such that the cutting of all the branches of the set increases the number of separate parts of the network, but the cutting of all the branches except one does not. { 'kət ,set }
- cut-sheet printer** [COMPUT SCI] A printer designed to print on separate sheets of paper. { 'kət ,ʃi:t |'print-ər }
- cut-signal-branch operation** [ELECTR] In systems where radio reception continues without cutting off the carrier, the cut-signal-branch operation technique disables a signal branch in one direction when it is enabled in the other to preclude unwanted signal reflections. { 'kət |'sig-nəl |'branch ,æp-ə,ræ-shən }
- cutter** [ENG ACOUS] An electromagnetic or piezoelectric device that converts an electric input to a mechanical output, used to drive the stylus that cuts a wavy groove in the highly polished wax surface of a recording disk. Also known as cutting head; head; phonograph cutter; recording head. { 'kəd-ər }
- cutting head** See cutter. { 'kəd-iŋ ,hed }
- cutting stylus** [ENG ACOUS] A recording stylus with a sharpened tip that removes material to produce a groove in the recording medium. { 'kəd-iŋ ,sti-ləs }
- CW** See continuous wave.
- cyberspace** [COMPUT SCI] The digital realms, including Web sites and virtual worlds. { 'sɪ-bər ,spæs }
- cycle-bound program** See CPU-bound program. { 'sɪ-kəl |'baʊnd 'prɒ-gram }
- cycle count** [COMPUT SCI] The operation of keeping track of the number of cycles a computer system goes through during processing time. { 'sɪ-kəl ,kaʊnt }
- cycle criterion** [COMPUT SCI] Total number of times a cycle in a computer program is to be repeated. { 'sɪ-kəl kri'ti-ri-ən }
- cycle index** [COMPUT SCI] 1. The number of times a cycle has been carried out by a computer. 2. The difference, or its negative, between the number of executions of a cycle which are desired and the number which have actually been carried out. { 'sɪ-kəl ,in ,deks }
- cycle index counter** [COMPUT SCI] A device that counts the number of times a given cycle of instructions in a computer program has been carried out. { 'sɪ-kəl ,in ,deks ,kaʊnt-ər }
- cycle-matching loran** See low-frequency loran. { 'sɪ-kəl ,mæç-iŋ ,lə'reɪn }
- cycle reset** [COMPUT SCI] The resetting of a cycle index to its initial or other specified value. { 'sɪ-kəl 'rɛ ,set }
- cycle skip** See skip logging. { 'sɪ-kəl ,skip }
- cycle stealing** [COMPUT SCI] A technique for memory sharing whereby a memory may serve two autonomous masters, commonly a central processing unit and an input-output channel or device controller, and in effect provide service to each simultaneously. { 'sɪ-kəl ,steɪ-lɪŋ }
- cycle time** [COMPUT SCI] The shortest time elapsed between one store (or fetch) and the next store (or fetch) in the same memory unit. Also known as memory cycle. { 'sɪ-kəl ,tɪm }
- cycle timer** [ELECTR] A timer that opens or closes circuits according to a predetermined schedule. { 'sɪ-kəl ,tɪm-ər }
- cycle timing diagram** [COMPUT SCI] A diagram showing the activity that occurs in each clock cycle of a computer during the execution of a machine-language instruction. { 'sɪ-kəl |'tɪm-iŋ ,di-ə-gram }
- cyclic code** [COMPUT SCI] A code, such as a binary code, that changes only in one digit when going from one number to the number immediately following, and in that digit by only one unit. { 'sɪk-lik 'kɒd }
- cyclic currents** See mesh currents. { 'sɪk-lik |'kər-ənts }
- cyclic feeding** [COMPUT SCI] In character recognition, a system employed by character readers in which each input document is issued to the document transport in a predetermined and constant period of time. { 'sɪk-lik 'fed-iŋ }
- cyclic redundancy check** [COMPUT SCI] A block check character in which each bit is calculated by adding the first bit of a specified byte to the second bit of the next byte, and so forth, spiraling through the block; used to verify the correctness of data. Abbreviated CRC. { 'sɪk-lik ri'dʌn-dən-sē ,çek }
- cyclic shift** [COMPUT SCI] A computer shift in which the digits dropped off at one end of a word are returned at the other end of the word. Also known as circuit shift; circular shift; end-around shift; nonarithmetic shift; ring shift. { 'sɪk-lik 'ʃift }
- cyclic storage** [COMPUT SCI] A computer storage device, such as a magnetic drum, whose storage



processing time.

Total number of program is to be

number of times by a computer, ive, between the which are desired ally been carried

A device that a given cycle of gram has been ant-ør) frequency oran,

etting of a cycle specified value.

-kəl, skip) technique for nory may serve nonly a central tput channel or ovide service to stēl-ij) shortest time ch) and the next nory unit. Also l, tīm) opens or closes ined schedule.

A diagram in each clock xecution of a 'sī-kəl tīm-ij

ch as a binary it when going immediately nly one unit.

ts. { 'sīk-lik

racter recog-acter readers sued to the rmined and 'fēd-ij }

A block is calculated fied byte to nd so forth, to verify the C. { 'sīk-lik

hift in which f a word are Also known round shift; k-lik 'shift) rter storage ose storage

medium is arranged in such a way that information can be read into or extracted from individual locations at only certain fixed times in a basic cycle. { 'sīk-lik 'stōr-ij }

**cyclic transfer** [COMPUT SCI] The automatic transfer of data from some medium to memory or from memory to some medium until all the data are read. { 'sīk-lik 'tranz-fər }

**cycling** [CONT SYS] A periodic change of the controlled variable from one value to another in an automatic control system. { 'sīk-liŋ }

**cycloconverter** [ELEC] A device that produces an alternating current of constant or precisely controllable frequency from a variable-frequency alternating-current input, with the output frequency usually one-third or less of the input frequency. { 'sī-klō-kən'vərd-ər }

**cyclomatic complexity** [COMPUT SCI] A measure of the complexity of a software module, equal to  $e - n + 2$ , where  $e$  is the number of edges in the control flow graph and  $n$  is the number of nodes in this graph (that is, the cyclomatic number of the graph plus one). { 'sī-klə,məd-ik kəm'plek-səd-ē }

**cyclophon** See beam-switching tube. { 'sī-klə ,fān }

**cyclotron-frequency magnetron** [ELECTR] A magnetron whose frequency of operation depends on synchronism between the alternating-current electric field and the electrons oscillating in a direction parallel to this field. { 'sī-klə, trān 'frē-kwən-sē 'mag-nə, trān }

**cyclotron-resonance maser** See gyrotron. { 'sī-klə, trān 'rez-ən-əns 'mā-zər }

**cylinder** [COMPUT SCI] 1. The virtual cylinder represented by the tracks of equal radius of a set of disks on a disk drive. 2. See seek area. { 'sil-ən-dər }

**cylindrical antenna** [ELECTROMAG] An antenna in which hollow cylinders serve as radiating elements. { sə'lin-drə-kəl an'ten-ə }

**cylindrical array** [ELECTR] An antenna, generally using electronic scanning, in which columns of radiating elements are arranged in a circle; used in some secondary radars. { sə'lin-drə-kəl ə'rā }

**cylindrical capacitor** [ELEC] A capacitor made of two concentric metal cylinders of the same length, with dielectric filling the space between the cylinders. Also known as coaxial capacitor. { sə'lin-drə-kəl kə'pas-əd-ər }

**cylindrical-coordinate robot** [CONT SYS] A robot in which the degrees of freedom of the manipulator arm are defined chiefly by cylindrical coordinates. { sə'lin-drə-kəl kō'örd-ən-ət 'rō ,bät }

**cylindrical-film storage** [ELECTR] A computer storage in which each storage element consists of a short length of glass tubing having a thin film of nickel-iron alloy on its outer surface. { sə'lin-drə-kəl 'film ,stōr-ij }

**cylindrical pinch** See pinch effect. { sə'lin-drə-kəl 'pinch }

**cylindrical winding** [ELEC] The current-carrying element of a core-type transformer, consisting of a single coil of one or more layers wound concentrically with the iron core. { sə'lin-drə-kəl 'wind-ij }

# D

- DAB** See digital audio broadcasting.
- DABS** See Mode S. { 'dabz or ,dē,ā,bē'es }
- dac** See digital-to-analog converter.
- DAC** See digital-to-analog converter.
- daemon** [COMPUT SCI] In Unix, a program that runs in the background, such as a server. { 'dē-mān }
- Dahlin's algorithm** [CONT SYS] A digital control algorithm in which the requirement of minimum response time used in the deadbeat algorithm is relaxed to reduce ringing in the system response. { 'dā-lanz ,al-ga,rith-əm }
- daily keying element** [COMMUN] Part of a specific cipher key that changes at predetermined intervals, usually daily. { 'dā-lē ,kē-ij ,el-ə-mənt }
- daisy chain** [COMPUT SCI] A means of connecting devices (readers, printers, and so on) to a central processor by party-line input/output buses which join these devices by male and female connectors, the last female connector being shorted by a suitable line termination. { 'dāz-ē ,chān }
- daisy wheel printer** [COMPUT SCI] A serial printer in which the printing element is a plastic hub that has a large number of flexible radial spokes, each spoke having one or more different raised printing characters; the wheel is rotated as it is moved horizontally step by step under computer control, and stops when a desired character is in a desired print position so a hammer can drive that character against an inked ribbon. { 'dāz-ē ,wēl ,print-ər }
- damaged pack** [COMPUT SCI] A disk drive whose use is impaired by physical damage such as a scratch on the recording surface or by a serious software error that renders control information on the disk unreadable. { 'dam-ijd 'pāk }
- damper** [ELECTR] A diode used in the horizontal deflection circuit of a CRT display device to make the sawtooth deflection current decrease smoothly to zero instead of oscillating at zero; the diode conducts each time the polarity is reversed by a current swing below zero. { 'dam-pər }
- damper winding** [ELEC] A winding consisting of several conducting bars on the field poles of a synchronous machine, short-circuited by conducting rings or plates at their ends, and used to prevent pulsating variations of the position or magnitude of the magnetic field linking the poles. Also known as amortisseur winding. { 'dam-pər ,wind-ij }
- damping coefficient** See resistance. { 'dam-pij ,kō-i ,fish-ənt }
- damping constant** See resistance. { 'dam-pij ,kän-stənt }
- damping resistor** [ELEC] 1. A resistor that is placed across a parallel resonant circuit or in series with a series resonant circuit to decrease the Q factor and thereby eliminate ringing. 2. A noninductive resistor placed across an analog meter to increase damping. { 'dam-pij ri,zis-tər }
- dance-hall machine** [COMPUT SCI] A multi-processor in which the memory is spread over several modules, and a switch is used to make connections between memory modules and processors, so that several processors can use the memory simultaneously. { 'dans ,hól mō ,shēn }
- dangling ELSE** [COMPUT SCI] A situation in which it is not clear to which part of a compound conditional statement an ELSE instruction belongs. { 'dan-glij 'els }
- daraf** [ELEC] The unit of elastance, equal to the reciprocal of 1 farad. { 'da,raf }
- dark conduction** [ELECTR] Residual conduction in a photosensitive substance that is not illuminated. { 'därk kən|dök-shən }
- dark current** See electrode dark current. { 'därk ,kär-ənt }
- dark-current pulse** [ELECTR] A phototube dark-current excursion that can be resolved by the system employing the phototube. { 'därk ,kär-ənt 'pəls }
- dark discharge** [ELECTR] An invisible electrical discharge in a gas. { 'därk 'dis,čärj }
- dark resistance** [ELECTR] The resistance of a selenium cell or other photoelectric device in total darkness. { 'därk ri,zis-təns }
- dark space** [ELECTR] A region in a glow discharge that produces little or no light. { 'därk ,spās }
- dark spot** [ELECTR] A spot on a television receiver tube that results from a spurious signal generated in the television camera tube during rescanning, generally from the redistribution of secondary electrons over the mosaic in the tube. { 'därk ,spät }
- dark-trace tube** [ELECTR] A cathode-ray tube with a bright face that does not necessarily luminesce, on which signals are displayed as dark traces or dark blips where the potassium chloride screen is

## Darlington amplifier

hit by the electron beam. Also known as skiatron. { 'därk ,träs ,tüb }

**Darlington amplifier** [ELECTR] A current amplifier consisting essentially of two separate transistors and often mounted in a single transistor housing. { 'dar-liŋ-tən ,am-plə,fri-ər }

**DARS** See direct audio radio service. { 'dē;ä;är'es or dārz }

**d'Arsonval current** [ELEC] A current consisting of isolated trains of heavily damped high-frequency oscillations of high voltage and relatively low current, used in diathermy. { 'dars-ən ,vól ,kär-ənt }

**d'Arsonval galvanometer** [ENG] A galvanometer in which a light coil of wire, suspended from thin copper or gold ribbons, rotates in the field of a permanent magnet when current is carried to it through the ribbons; the position of the coil is indicated by a mirror carried on it, which reflects a light beam onto a fixed scale. Also known as light-beam galvanometer. { 'dars-ən ,vól gal-və'näm-əd-ər }

**DASD** See direct-access storage device. { 'daz,dē }

**DAT** See digital audio tape.

**data** [COMPUT SCI] 1. General term for numbers, letters, symbols, and analog quantities that serve as input for computer processing. 2. Any representations of characters or analog quantities to which meaning, if not information, may be assigned. { 'dad-ə ,däd-ə, or 'däd-ə }

**data acquisition** [COMMUN] The phase of data handling that begins with the sensing of variables and ends with a magnetic recording or other record of raw data; may include a complete radio telemetering link. { 'dad-ə ,ak-wə ,zish-ən }

**data acquisition computer** [COMPUT SCI] A computer that is used to acquire and analyze data generated by instruments. { 'dad-ə ,ak-wə ,zish-ən kəm'pyüd-ər }

**data aggregate** [COMPUT SCI] The set of data items within a record. { 'dad-ə ,ag-rə-gət }

**data analysis** [COMPUT SCI] The evaluation of digital data. { 'dad-ə ,nal-ə-səs }

**data attribute** [COMPUT SCI] A characteristic of a block of data, such as the type of representation used or the length in characters. { 'dad-ə ,ä-trə'byüt }

**data automation** [COMPUT SCI] The use of electronic, electromechanical, or mechanical equipment and associated techniques to automatically record, communicate, and process data and to present the resultant information. { 'dad-ə öd-ə'mä-shən }

**data bank** [COMPUT SCI] A complete collection of information such as contained in automated files, a library, or a set of computer disks. { 'dad-ə ,bänk }

**database** [COMPUT SCI] A nonredundant collection of interrelated data items that can be shared and used by several different subsystems. { 'dad-ə ,bäs }

**database/data communication** [COMPUT SCI] An advanced software product that combines a database management system with data com-

munications procedures. Abbreviated DB/DC. { 'dad-ə ,bäs 'dad-ə kə ,myü-nə'käs-shən }

**database machine** [COMPUT SCI] A computer that handles the storage and retrieval of data into and out of a database. { 'dad-ə ,bäs mäs-shən }

**database management system** [COMPUT SCI] A special data processing system, or part of a data processing system, which aids in the storage, manipulation, reporting, management, and control of data. Abbreviated DBMS. { 'dad-ə ,bäs 'man-ij-mənt ,sis-təm }

**database server** [COMPUT SCI] An independently functioning computer in a local-area network that holds and manages the database. { 'dad-ə ,bäs ,sər-vər }

**data break** [COMPUT SCI] A facility which permits input/output transfers to occur without disturbing program execution in a computer. { 'dad-ə ,bräk }

**data buffering** [COMPUT SCI] The temporary collection and storage of data awaiting further processing in physical storage devices, allowing a computer and its peripheral devices to operate at different speeds. { 'dad-ə ,bəf-ə-riŋ }

**data bus** [ELECTR] An internal channel that carries data between a computer's central processing unit and its random-access memory. { 'dad-ə ,bäs }

**data capture** [COMPUT SCI] The acquisition of data to be entered into a computer. { 'dad-ə ,kəp-tʃər }

**data carrier** [COMPUT SCI] A medium on which data can be recorded, and which is usually easily transportable, such as disks or tape. { 'dad-ə ,kär-ē-ər }

**data carrier storage** [COMPUT SCI] Any type of storage in which the storage medium is outside the computer, such as disks and tape, in contrast to inherent storage. { 'dad-ə ,kär-ē-ər ,stör-ij }

**data cartridge** [COMPUT SCI] A tape cartridge used for nonvolatile and removable data storage in small digital systems. { 'dad-ə ,kär-trij }

**data cell drive** [COMPUT SCI] A large-capacity storage device consisting of strips of magnetic tape which can be individually transferred to the read-write head. { 'dad-ə ,sel ,driv }

**data center** [COMPUT SCI] An organization established primarily to acquire, analyze, process, store, retrieve, and disseminate one or more types of data. { 'dad-ə ,sen-tər }

**data chain** [COMPUT SCI] Any combination of two or more data elements, data items, data codes, and data abbreviations in a prescribed sequence to yield meaningful information, for example, "date" consists of data elements year, month, and day. { 'dad-ə ,chän }

**data chaining** [COMPUT SCI] A technique used in scatter reading or scatter writing in which new storage areas are defined for use as soon as the current data transfer is completed. { 'dad-ə ,chän-iŋ }

**data channel** [COMPUT SCI] A bidirectional data path between input/output devices and the main memory of a digital computer permitting one or more input/output operations to proceed

es. Abbreviated DB/DC  
 yü-nə'kā-shən }  
 [COMPUT SCI] A computer that  
 retrieval of data into an  
 { 'dad-ə,bās mǎ,shēn }  
**system** [COMPUT SCI] A  
 system, or part of a data  
 ich aids in the storage  
 , management, and con-  
 id DBMS. { 'dad-ə,bā  
 r SCI] An independent  
 a local-area network that  
 database. { 'dad-ə,bā  
 A facility which permits  
 occur without disturba  
 a computer. { 'dad-ə  
 SCI] The temporary col-  
 data awaiting further  
 rage devices, allowing  
 ical devices to operate  
 ad-ə ,bǎf-ə-ríng }  
 ernal channel that car-  
 mputer's central pro-  
 dom-access memory.  
 ]] The acquisition of  
 i computer. { 'dad-ə  
 A medium on which  
 which is usually easily  
 ks or tape. { 'dad-ə  
 INPUT SCI] Any type of  
 ge medium is outside  
 ; and tape, in contrast  
 d-ə ,kār-ē-ər ,stǒr-ij }  
 A tape cartridge used  
 able data storage in  
 lad-ə ,kār-tríj }  
 SCI] A large-capacity  
 of strips of magnetic  
 ily transferred to the  
 sel ,drív }  
 i organization estab-  
 e, analyze, process,  
 inate one or more  
 :tǒr }  
 combination of two  
 i items, data codes,  
 rescribed sequence  
 ation, for example,  
 nents year, month,  
 v technique used in  
 fting in which new  
 or use as soon as  
 mpleted. { 'dad-ə  
 bidirectional data  
 vices and the main  
 er permitting one  
 itions to proceed

concurrently with computation. { 'dad-ə  
 ,chǎn-ə }  
**data circuit** [ELECTR] A telephone facility that  
 allows transmission of digital data pulses with  
 minimum distortion. { 'dad-ə ,sǎr-kǎt }  
**data code** [COMPUT SCI] A number, letter, charac-  
 ter, symbol, or any combination thereof, used to  
 represent a data item. { 'dad-ə ,kǒd }  
**data collection** [COMPUT SCI] The process of send-  
 ing data to a central point from one or more  
 locations. { 'dad-ə ,kǎ ,lek-shǎn }  
**data communication network** [COMPUT SCI] A set  
 of nodes, consisting of computers, terminals, or  
 some type of communication control units in  
 various locations, connected by links consisting  
 of communication channels providing a data  
 path between the nodes. { 'dad-ə ,kǎ ,myü-nǎ ,kǎ-  
 shǎn 'net,wǎrk }  
**data communications** [COMMUN] The conveying  
 from one location to another of information that  
 originates or is recorded in alphabetic, numeric,  
 or pictorial form, or as a signal that represents a  
 measurement, includes telemetering and facsim-  
 ile but not voice or television. Also known as data  
 transmission. { 'dad-ə ,kǎ ,myü-nǎ 'kǎ-shǎnz }  
**data communications processor** [COMPUT SCI]  
 A small computer used to control the flow  
 of data between machines and terminals over  
 communications channels. { 'dad-ə ,kǎ ,myü-nǎ  
 'kǎ-shǎnz 'prás,es-ər }  
**data compression** [COMPUT SCI] Reduction in the  
 number of bits used to represent an item of  
 data. Also known as compression. { 'dad-ə ,kǎm  
 ,prǎsh-ən }  
**data concentrator** [ELECTR] A device, such as a  
 microprocessor, that takes data from several  
 different teletypewriter or other slow-speed lines  
 and feeds them to a single higher-speed line.  
 { 'dad-ə ,kǎn-sǎn ,trǎd-ər }  
**data conversion** [COMPUT SCI] The changing of  
 the representation of data from one form to  
 another, as from binary to decimal, or from one  
 physical recording medium to another (as from  
 tape to disk), or from one file format to another, or  
 from one programming language to another. Also  
 known as conversion. { 'dad-ə ,kǎn ,vǎr-zhǎn }  
**data conversion line** [COMPUT SCI] The channel,  
 electronic or manual, through which data el-  
 ements are transferred between data banks.  
 { 'dad-ə ,kǎn ,vǎr-zhǎn ,lǐn }  
**data converter** See converter. { 'dad-ə ,kǎn  
 ,vǎr-ər }  
**data definition** [COMPUT SCI] The statements in  
 a computer program that specify the physical  
 attributes of the data to be processed, such  
 as location and quantity of data. { 'dad-ə  
 ,def-ə 'nǐsh-ən }  
**data dependence graph** [COMPUT SCI] A chart  
 that represents a program in a data flow lan-  
 guage, in which each node is a function and each  
 arc carries a value. { 'dad-ə ,dǐ ,pen-dǎns ,grǎf }  
**data description language** [COMPUT SCI] A pro-  
 gramming language used to specify the arrange-  
 ment of data items within a database. { 'dad-ə  
 ,dǐskríp-shǎn ,lǎŋ-gwǐj }

**data descriptor** [COMPUT SCI] A pointer indicating  
 the memory location of a data item. { 'dad-ə  
 ,dǐ'skríp-tǒr }  
**data dictionary** [COMPUT SCI] A catalog which  
 contains the names and structures of all data  
 types. { 'dad-ə ,dǐk-shǎ ,ner-ē }  
**data display** [COMPUT SCI] Visual presentation of  
 processed data by specially designed electronic  
 or electromechanical devices, such as video  
 monitors, through interconnection (either on- or  
 off-line) with digital computers or component  
 equipments. { 'dad-ə ,dǐ ,splǎ }  
**data distribution** [COMPUT SCI] Data transmission  
 to one or more locations from a central point.  
 { 'dad-ə ,dǐs-trǎ ,byü-shǎn }  
**data division** [COMPUT SCI] The section of a pro-  
 gram (written in the COBOL language) which  
 describes each data item used for input, output,  
 and storage. { 'dad-ə ,dǐ ,vǐzh-ən }  
**data-driven execution** [COMPUT SCI] A mode of  
 carrying out a program in a data flow system, in  
 which an instruction is carried out whenever all  
 its input values are present. { 'dad-ə ,drív-ən  
 ,ek-sǎ 'kyü-shǎn }  
**data element** [COMPUT SCI] A set of data items  
 pertaining to information of one kind, such as  
 months of a year. [COMMUN] An item of data as  
 represented before encoding and after decoding.  
 { 'dad-ə ,el-ə-mǎnt }  
**data encryption standard** [COMMUN] A crypto-  
 graphic algorithm of validated strength which is  
 in the public domain and is accepted as a stan-  
 dard. Abbreviated DES. { 'dad-ə ,en ,krip-shǎn  
 'stan-dǎrd }  
**data entry** [COMPUT SCI] The procedures for plac-  
 ing data in a computer system. { 'dad-ə ,en-trē }  
**data entry program** [COMPUT SCI] An application  
 program that receives data from a keyboard or  
 other input device and stores it in a computer  
 system. Also known as input program. { 'dad-ə  
 'en-trē ,prǒ-grǎm }  
**data entry terminal** [COMPUT SCI] A portable key-  
 board and small numeric display designed for  
 interactive communication with a computer.  
 { 'dad-ə 'en-trē ,tǎr-mǎn-ǎl }  
**data error** [COMPUT SCI] A deviation from correct-  
 ness in data, usually an error, which occurred  
 prior to processing the data. { 'dad-ə ,er-ər }  
**data exchange system** [COMPUT SCI] A combi-  
 nation of hardware and software designed to  
 accept data from various sources, sort the data  
 according to its destination and priority, carry out  
 any necessary code conversions, and transmit the  
 data to its destination. { 'dad-ə ,íks'chǎn ,sǐs-  
 tǎm }  
**data expansion** [COMPUT SCI] The reproduction in  
 its original form of information that has under-  
 gone data compression. { 'dad-ə ,íks ,span-chǎn }  
**data field** [COMPUT SCI] An area in the main  
 memory of the computer in which a data record  
 is contained. { 'dad-ə ,fēld }  
**data flow** [COMMUN] The route followed by a data  
 message from its origination to its destination,  
 including all the nodes through which it trav-  
 els. [COMPUT SCI] The transfer of data from an

## data flow analysis

- external storage device, through the processing unit and memory, and out to an external storage device. { 'dad-ə ,flō }
- data flow analysis** [COMPUT SCI] The development of models for the movement of information within an organization, indicating the sources and destinations of information and where and how information is transmitted, processed, and stored. { 'dad-ə ;flō ə,nal-ə-səs }
- data flow diagram** [COMPUT SCI] A chart that traces the movement of data in a computer system and shows how the data is to be processed, using circles to represent data. Also known as bubble chart; system flowchart. { 'dad-ə ;flō ,dī-ə,gram }
- data flow language** [COMPUT SCI] A programming language used in a data flow system. { 'dad-ə ;flō ,lɑŋ-gwɪj }
- data flow system** [COMPUT SCI] An alternative to conventional programming languages and architectures which is able to achieve a high degree of parallel computation, in which values rather than value containers are dealt with, and in which all processing is achieved by applying functions to values to produce new values. { 'dad-ə ;flō ,sis-təm }
- data flow technique** [COMPUT SCI] A method of computer system design in which diagrams and charts that show how data is to be handled by the system are used to prepare detailed specifications from which actual programs can be written. { 'dad-ə ;flō tek,nɪk }
- data formatting** [COMPUT SCI] Structuring the presentation of data as numerical or alphabetic and specifying the size and type of each datum. { 'dad-ə fɔr'mad-ɪŋ }
- data fusion** [ELECTR] The combining of data as from several radars or other sensors with common fields of view, in order to improve the accuracy of the estimations being made about features of interest. { 'dad-ə ,fyū-zhən }
- data generator** [COMPUT SCI] A specialized word generator in which the programming is designed to test a particular class of device, the pulse parameters and timing are adjustable, and selected words may be repeated, reinserted later in the sequence, omitted, and so forth. { 'dad-ə ,jen-ə ,rād-ər }
- datagram** [COMPUT SCI] A unit of information in the Internet Protocol (IP) containing both data and address information. In TCP/IP networks, datagrams are referred to as packets. { 'dad-ə ,gram }
- data-handling system** [COMPUT SCI] Automatically operated equipment used to interpret data gathered by instrument installations. Also known as data reduction system. { 'dad-ə ,hand-liŋ ,sis-təm }
- data independence** [COMPUT SCI] Separation of data from processing, either so that changes in the size or format of the data elements require no change in the computer programs processing them or so that these changes can be made automatically by the database management system. { 'dad-ə in-də'pen-dəns }
- data-initiated control** [COMPUT SCI] The automatic handling of a program dependent only upon the value of input data fed into the computer. { 'dad-ə i,nɪʃ-ē,ād-əd kən'trɔl }
- data-intense application** [COMPUT SCI] A program or computer system that handles large quantities of data and extremely repetitive tasks. { 'dad-ə in'tens ,əp-lə'kɑ:ʃən }
- data interchange** [COMPUT SCI] Switching of data in and out of storage units. { 'dad-ə 'in-tər ,chɑ:nj }
- data item** [COMPUT SCI] A single member of a data element. Also known as datum. { 'dad-ə ,ɪ-dəm }
- data level** [COMPUT SCI] The rank of a data element in a source language with respect to other elements in the same record. { 'dad-ə ,lev-əl }
- data library** [COMPUT SCI] A center for the storage of data not in current use by the computer. { 'dad-ə ,lɪbrer-ē }
- data line** [COMMUN] An individual circuit that transmits data within a communications or computer channel. { 'dad-ə ,lɪn }
- data line monitor** [COMMUN] A test instrument that analyzes the signals transmitted over a communications line and provides a visual display or stores the results for further analysis, or both. { 'dad-ə ,lɪn 'mɑ:n-əd-ər }
- data link** [COMMUN] The physical equipment for automatic transmission and reception of information. Also known as communication link; information link; tie line; tie-link. { 'dad-ə ,lɪŋk }
- data logging** [COMPUT SCI] Conversion of electrical impulses from process instruments into digital data to be recorded, stored, and periodically tabulated. { 'dad-ə ,lɑŋ-ɪŋ }
- data management** [COMPUT SCI] The collection of functions of a control program that provide access to data sets, enforce data storage conventions, and regulate the use of input/output devices. { 'dad-ə ,mæn-ɪj-mənt }
- data management program** [COMPUT SCI] A computer program that keeps track of what is in a computer system and where it is located, and of the various means to store and access the data efficiently. { 'dad-ə ,mæn-ɪj-mənt ,prɔ:grəm }
- data manipulation** [COMPUT SCI] The standard operations of sorting, merging, input/output, and report generation. { 'dad-ə mə,nɪp-yə,lā:ʃən }
- data manipulation language** [COMPUT SCI] The interface between a data base and an applications program, which is embedded in the language of the applications program and provides the programmer with procedures for accessing data in the data base. { 'dad-ə mə,nɪp-yə;lā:ʃən ,lɑŋ-gwɪj }
- data mining** [COMPUT SCI] 1. The identification or extraction of relationships and patterns from data using computational algorithms to reduce, model, understand, or analyze data. 2. The automated process of turning raw data into useful information by which intelligent computer systems sift and sort through data, with little or no help from humans, to look for patterns or to predict trends. { 'dad-ə ,mɪn-ɪŋ }

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**data module** [COMPUT SCI] A sealed disk drive unit that includes mechanical and electronic components for handling data stored on the disk. { 'dad-ə, məj-yūl }

**data move instruction** [COMPUT SCI] An instruction in a computer program to transfer data between memory locations and registers or between the central processor and peripheral devices. { 'dad-ə, mūv in'strək-shən }

**data name** [COMPUT SCI] A symbolic name used to represent an item of data in a source program, in place of the address of the data item. { 'dad-ə, nām }

**data organization** [COMPUT SCI] Any one of the data management conventions for physical and spatial arrangement of the physical records of a data set. Also known as data set organization. { 'dad-ə, ɔr-gə-nə-zā-shən }

**data origination** [COMPUT SCI] The process of putting data in a form that can be read by a machine. { 'dad-ə, ri-ə-nā-shən }

**data patch panel** [COMMUN] A plugboard used to rearrange communications lines and modems by connecting them with double-ended cables, or to attach monitoring devices to analyze circuit signals. { 'dad-ə, 'pæç, pæn-əl }

**data plotter** [COMPUT SCI] A device which plots digital information in a continuous fashion. { 'dad-ə, pläd-ər }

**data processing** [COMPUT SCI] Any operation or combination of operations on data, including everything that happens to data from the time they are observed or collected to the time they are destroyed. Also known as information processing. { 'dad-ə, 'präs, es-iŋ }

**data processing center** [COMPUT SCI] A computer installation providing data processing service for others, sometimes called customers, on a reimbursable or nonreimbursable basis. { 'dad-ə, 'präs, es-iŋ, sent-ər }

**data processing inventory** [COMPUT SCI] An identification of all major data processing areas in an agency for the purpose of selecting and focusing upon those in which the use of automatic data processing (ADP) techniques appears to be potentially advantageous, establishing relative priorities and schedules for embarking on ADP studies, and identifying significant relationships among areas to pinpoint possibilities for the integration of systems. { 'dad-ə, 'präs, es-iŋ, in-vən, 'tɔr-ē }

**data processor** [COMPUT SCI] 1. Any device capable of performing operations on data, for instance, a desk calculator, an analog computer, or a digital computer. 2. Person engaged in processing data. { 'dad-ə, 'präs, es-ər }

**data protection** [COMPUT SCI] The safeguarding of data against unauthorized access or accidental or deliberate loss or damage. { 'dad-ə, prə, tek-shən }

**data purification** [COMPUT SCI] The process of removing as many inaccurate or incorrect items as possible from a mass of data before automatic data processing is begun. { 'dad-ə, pyūr-ə, fə'kā-shən }

**data rate** [COMMUN] The number of digital bits per second that are recorded or retrieved from a data storage device during the transfer of a large data block. { 'dad-ə, rāt }

**data record** [COMPUT SCI] A collection of data items related in some fashion and usually contiguous in location. { 'dad-ə, rek-ɔrd }

**data recorder** [COMPUT SCI] A keyboard device for entering data onto magnetic tape. { 'dad-ə, ri, kɔr-dər }

**data reduction** [COMPUT SCI] The transformation of raw data into a more useful form. { 'dad-ə, ri, 'dæk-shən }

**data reduction system** See data-handling system. { 'dad-ə, ri, 'dæk-shən, sis-təm }

**data redundancy** [COMPUT SCI] The occurrence of values for data elements more than once within a file or database. { 'dad-ə, ri, dən-dən-sē }

**data register** [COMPUT SCI] A register used in microcomputers to temporarily store data being transmitted to or from a peripheral device. { 'dad-ə, rej-ə-stər }

**data representation** [COMPUT SCI] 1. The way that the physical properties of a medium are used to represent data. 2. The manner in which data is expressed symbolically by binary digits in a computer. { 'dad-ə, rep-ri-zen'tā-shən }

**data retrieval** [COMPUT SCI] The searching, selecting, and retrieving of actual data from a personnel file, data bank, or other file. { 'dad-ə, ri'trē-vəl }

**data rules** [COMPUT SCI] Conditions which must be met by data to be processed by a computer program. { 'dad-ə, rŭlz }

**data scope** [ELECTR] An electronic display that shows the content of the information being transmitted over a communications channel. { 'dad-ə, skɔp }

**data security** [COMPUT SCI] The protection of data against the deliberate or accidental access of unauthorized persons. Also known as file security. { 'dad-ə, sə, kyūr-əd-ē }

**data set** [COMPUT SCI] 1. A named collection of similar and related data records recorded upon some computer-readable medium. 2. A data file in IBM 360 terminology. { 'dad-ə, set }

**data set coupler** [COMPUT SCI] The interface between a parallel computer input/output bus and the serial input/output of a modem. { 'dad-ə, set, kəp-lər }

**data set label** [COMPUT SCI] A data element that describes a data set, and usually includes the name of the data set, its boundaries in physical storage, and certain characteristics of data items within the set. { 'dad-ə, set, lā-bəl }

**data set migration** [COMPUT SCI] The process of moving inactive data sets from on-line storage to back up storage in a time-sharing environment. { 'dad-ə, set mɪ, grā-shən }

**data set organization** See data organization. { 'dad-ə, set, ɔr-gə-nə-zā-shən }

**data sink** [COMPUT SCI] A memory or recording device capable of accepting data signals from a data transmission device and storing data for future use. { 'dad-ə, sɪŋk }

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**daughter board** [COMPUT SCI] A small printed circuit board that is attached to another printed circuit board. { 'död-ər ,börd }

**Davisson-Calbick formula** [ELECTR] A formula which states that the focal length of a simple electrostatic lens consisting of a circular hole in a conducting plate is equal to four times the potential of the plate divided by the difference in the potential gradients on either side of the plate. { 'dä-vä-sən 'kal-bik ,fór-myə-lə }

**day clock** [COMPUT SCI] An internal binary counter, with a resolution usually of a microsecond and a cycle measured in years, providing an accurate measure of elapsed time independent of system activity. { 'dä ,kläk }

**daylight controls** [ENG] Special devices which automatically control the electric power to a lamp, causing the light to operate during hours of darkness and to be extinguished during daylight hours. { 'dä ,līt kən'trōlz }

**daylight lamp** [ELEC] An incandescent or fluorescent lamp that emits light whose spectral distribution is approximately that of daylight. { 'dä ,līt ,lamp }

**dBa** See adjusted decibel.

**DB/DC** See database/data communication.

**dBf** See decibels above 1 femtowatt.

**dBk** See decibels above 1 kilowatt.

**dBm** See decibels above 1 milliwatt.

**DBMS** See database management system.

**dBp** See decibels above 1 picowatt.

**dBm** See decibels above reference noise.

**DBRT diode** See double-barrier resonant tunneling diode. { 'dē|bē|'rītē 'dī,ōd }

**DB server** [COMPUT SCI] The database portion of a Web server, which serves as a repository of data and content. { 'dē|bē ,sər-vər }

**DBS system** See direct broadcasting satellite system. { 'dē|bē 'es ,sis-təm }

**dBV** See decibels above 1 volt.

**dBW** See decibels above 1 watt.

**dBx** See decibels above reference coupling.

**dc** See direct current.

**D cable** [ELEC] Two-conductor cable, each conductor having the shape of the letter D, with insulation between the conductors and between the conductors and the sheath. { 'dē ,kā-bəl }

**DCFL** See direct-coupled FET logic.

**DCT** See discrete cosine transform.

**DCTL** See direct-coupled transistor logic.

**dc-to-ac converter** See inverter. { 'dē,sē tü 'ā,sē kən'vərd-ər }

**dc-to-ac inverter** See inverter. { 'dē,sē tü 'ā,sē in'vərd-ər }

**dc-to-dc converter** [ELEC] An electronic circuit which converts one direct-current voltage into another, consisting of an inverter followed by a step-up or step-down transformer and rectifier. { 'dē,sē tü 'dē,sē kən'vərd-ər }

**dcwv** See direct-current working volts.

**DDA** See digital differential analyzer.

**D-display** [ELECTR] A radar display format in which the coordinates are the same as in the

C-display, with target spots extended vertically to indicate range. Also known as D-indicator; D-scan; D-scope. { 'dē di ,splā }

**DDR** See double data rate.

**DDS** See digital data service.

**deaccentuator** [ELECTR] A circuit used in a frequency-modulation receiver to offset the pre-emphasis of higher audio frequencies introduced at the transmitter. { ,dē-ak'sen-chə ,wäd-ər }

**dead** [ELEC] Free from any electric connection to a source of potential difference from electric charge, not having a potential different from that of earth; the term is used only with reference to current-carrying parts which are sometimes alive or charged. { ded }

**dead band** [ELEC] The portion of a potentiometer element that is shortened by a tap; when the wiper traverses this area, there is no change in output. [ENG] The range of values of the measured variable to which an instrument will not effectively respond. Also known as dead zone; neutral zone. { 'ded ,band }

**deadbeat algorithm** [CONTR SYS] A digital control algorithm which attempts to follow set-point changes in minimum time, assuming that the controlled process can be modeled approximately as a first-order plus dead-time system. { 'ded ,bēt 'al-gə ,rith-əm }

**dead-center position** [ELEC] Position in which a brush would be placed on the commutator of a direct-current motor or generator if the field flux were not distorted by armature reaction. { 'ded 'sen-tər pə'zish-ən }

**dead code** [COMPUT SCI] Statements in a computer program that are not executed, usually as the result of modification of a large program. { 'ded 'kōd }

**dead earth** [ELEC] A connection between a line conductor and earth by means of a path of low resistance. { 'ded 'ərth }

**dead end** [ELEC] The portion of a tapped coil through which no current is flowing at a particular switch position. { 'ded ,end }

**dead-end effect** [ELEC] Absorption of energy by unused portions of a tapped coil. { 'ded ,end 'i'fekt }

**dead-end switch** [ELEC] A switch used to short-circuit unused portions of a tapped coil to prevent dead-end effects. { 'ded ,end ,switʃ }

**dead ground** [ELEC] A low-resistance connection between the ground and an electric circuit. { 'ded 'graund }

**dead halt** See drop-dead halt. { 'ded 'hōlt }

**dead letter box** [COMMUN] A file for storing undeliverable messages in a data communications system, particularly a message switching system. { 'ded 'led-ər ,bāks }

**deadlock** [COMPUT SCI] A situation in which a task in a multiprogramming system cannot proceed because it is waiting for an event that will never occur. Also known as deadly embrace; interlock; knot. { 'ded ,lāk }

**deadman switch** [ELEC] An electrical switch that activates some function if it is turned off. { 'ded ,man ,switʃ }

## dead short

- dead short** [ELEC] A short-circuit path that has extremely low resistance. [ˈdedˈʃɔrt]
- dead spot** [COMMUN] A geographic location in which signals from a radio or television transmitter are received poorly or not at all. [ˈdedˌspɔt]
- dead time** [CONT SYS] The time interval between a change in the input signal to a process control system and the response to the signal. [ENG] The time interval, after a response to one signal or event, during which a system is unable to respond to another. Also known as insensitive time. [ˈdedˌtɪm]
- dead-time compensation** [CONT SYS] The modification of a controller to allow for time delays between the input to a control system and the response to the signal. [ˈdedˌtɪm kəm-pənˈsā-shən]
- dead zone** See dead band. [ˈdedˌzɔn]
- dead zone unit** [COMPUT SCI] An analog computer device that maintains an output signal at a constant value over a certain range of values of the input signal. [ˈdedˌzɔnˌyü-nət]
- deallocation** [COMPUT SCI] The release of a portion of computer storage or a peripheral unit from control by a computer program when it is no longer needed. [diˈæl-əˈkā-shən]
- debatable time** [COMPUT SCI] In the keeping of computer usage statistics, time that cannot be attributed with certainty to any one of various categories of computer use. [diˈbād-ə-bəlˈtɪm]
- deblocking** [COMPUT SCI] Breaking up a block of records into individual records. [diˈblæk-ɪŋ]
- debug** [COMPUT SCI] To test for, locate, and remove mistakes from a program or malfunctions from a computer. [ELECTR] To detect and remove secretly installed listening devices popularly known as bugs. [ENG] To eliminate from a newly designed system the components and circuits that cause early failures. [diˈbæg]
- debugging routine** [COMPUT SCI] A routine to aid programmers in the debugging of their routines; some typical routines are storage printout, tape printout, and drum printout routines. [diˈbæg-ɪŋ ruːtɪn]
- debugging statement** [COMPUT SCI] Temporary instructions inserted into a program being tested so as to pinpoint problem areas. [diˈbæg-ɪŋˌstæt-mənt]
- debug on-line** [COMPUT SCI] **1.** To detect and correct errors in a computer program by using only certain parts of the hardware of a computer, while other routines are being processed simultaneously. **2.** To detect and correct errors in a program from a console distant from a computer in a multiaccess system. [diˈbæg-ɪŋ ɒnˈlɪn]
- debunching** [ELECTR] A tendency for electrons in a beam to spread out both longitudinally and transversely due to mutual repulsion; the effect is a drawback in velocity modulation tubes. [diˈbʌnch-ɪŋ]
- debye** [ELEC] A unit of electric dipole moment, equal to  $10^{-18}$  Franklin centimeter. [dəˈbiː]

- Debye theory** [ELEC] The classical theory of the orientation polarization of polar molecules in which the molecules have a single relaxation time, and the plot of the imaginary part of the complex relative permittivity against the real part is a semicircle. [dəˈbiːˌθiː-ə-rɪ]
- decade** [ELEC] A group or assembly of 10 units; for example, a decade counter counts 10 in one column, and a decade box inserts resistance quantities in multiples of powers of 10. [deˈkād]
- decade box** [ELEC] An assembly of precision resistors, coils, or capacitors whose individual values vary in submultiples and multiples of 10; by appropriately setting a 10-position selector switch for each section, the decade box can be set to any desired value within its range. [deˈkādˌbɔks]
- decade bridge** [ELECTR] Electronic apparatus for measurement of unknown values of resistances or capacitances by comparison with known values (bridge); one secondary section of the oscillator-driven transformer is tapped in decade steps, the other in 10 uniform steps. [deˈkādˌbrɪdʒ]
- decade counter** See decade scaler. [deˈkādˌkaunt-ər]
- decade scaler** [ELECTR] A scaler that produces one output pulse for every 10 input pulses. Also known as counter decade; decade counter; scale-of-ten circuit. [deˈkādˌskāl-ər]
- decelerating electrode** [ELECTR] Of an electron-beam tube, an electrode to which a potential is applied to decrease the velocity of the electrons in the beam. [diˈsel-əˌrād-ɪŋ ɪˈlekˌtrōd]
- deceleration time** [COMPUT SCI] For a storage medium, such as magnetic tape that must be physically moved in order for reading or writing to take place, the minimum time that must elapse between the completion of a reading or writing operation and the moment that motion ceases. Also known as stop time. [diˈsel-əˈrā-shənˌtɪm]
- decentralized data processing** [COMPUT SCI] An arrangement comprising a data-processing center for each division or location of a single organization. [diˈsen-trəˌlɪzd ˈdɑd-əˈpræs-es-ɪŋ]
- deception** [ELECTR] The deliberate radiation, reradiation, alteration, absorption, or reflection of electromagnetic energy in a manner intended to mislead an enemy in the interpretation of information received by his electronic systems. [diˈsep-shən]
- decibel adjusted** See adjusted decibel. [ˈdes-əˌbel ətʃəs-təd]
- decibel loss** [COMMUN] Signal attenuation over a transmission path or a conductor expressed in decibels. [ˈdes-əˌbelˌlɔs]
- decibel meter** [ENG] An instrument calibrated in logarithmic steps and labeled with decibel units and used for measuring power levels in communication circuits. [ˈdes-əˌbelˌmɛd-ər]
- decibels above 1 femtowatt** [ELEC] A power level equal to 10 times the common logarithm of the ratio of the given power in watts to 1 femtowatt



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(10<sup>-15</sup> watt). Abbreviated dBf. ('des-ə-bälz ə 'bäv 'wän 'fem-tō,wät )

**decibels above 1 kilowatt** [ELEC] A measure of power equal to 10 times the common logarithm of the ratio of a given power to 1000 watts. Abbreviated dBk. ('des-ə-bälz ə'bäv 'wän 'kil-ə 'wät )

**decibels above 1 milliwatt** [ELEC] A measure of power equal to 10 times the common logarithm of the ratio of a given power to 0.001 watt; a negative value, such as -2.7 dBm, means decibels below 1 milliwatt. Abbreviated dBm. ('des-ə-bälz ə'bäv 'wän 'mil-i,wät )

**decibels above 1 picowatt** [ELEC] A measure of power equal to 10 times the common logarithm of the ratio of a given power to 1 picowatt. Abbreviated dBp. ('des-ə-bälz ə'bäv 'wän 'pē-kō 'wät )

**decibels above 1 volt** [ELEC] A measure of voltage equal to 20 times the common logarithm of the ratio of a given voltage to 1 volt. Abbreviated dBV. ('des-ə-bälz ə'bäv 'wän 'vōlt )

**decibels above 1 watt** [ELEC] A measure of power equal to 10 times the common logarithm of the ratio of a given power to 1 watt. Abbreviated dBW. ('des-ə-bälz ə'bäv 'wän 'wät )

**decibels above reference coupling** [ELEC] A measure of the coupling between two circuits, expressed in relation to a reference value of coupling that gives a specified reading on a specified noise-measuring set when a test tone of 90 dBa is impressed on one circuit. Abbreviated dBx. ('des-ə-bälz ə'bäv 'ref-rəns ,kəp-lig )

**decibels above reference noise** [ELEC] Units used to show the relationship between the interfering effect of a noise frequency, or band of noise frequencies, and a fixed amount of noise power commonly called reference noise; a 1000-hertz tone having a power level of -90 dBm was selected as the reference noise power, superseded by the adjusted decibel unit. Abbreviated dBm. ('des-ə-bälz ə'bäv 'ref-rəns ,nōiz )

**decimal attenuator** [ELECTR] System of attenuators arranged so that a voltage or current can be reduced decimally. ('des-mäl ə'ten-yə,wäd-ər )

**decimal-binary switch** [ELEC] A switch that connects a single input lead to appropriate combinations of four output leads (representing 1, 2, 4, and 8) for each of the decimal-numbered settings of its control knob; thus, for position 7, output leads 1, 2, and 4 would be connected to the input. ('des-mäl ;bīn-ə-rē 'swich )

**decimal code** [COMPUT SCI] A code in which each allowable position has one of 10 possible states; the conventional decimal number system is a decimal code. ('des-mäl 'kōd )

**decimal-coded digit** [COMPUT SCI] One of 10 arbitrarily selected patterns of 1 and 0 used to represent the decimal digits. Also known as coded decimal. ('des-mäl 'kōd-əd 'dij-ət )

**decimal processor** [COMPUT SCI] A digital computer organized to calculate by decimal arithmetic. ('des-mäl 'präs,es-ər )

**decimal-to-binary conversion** [COMPUT SCI] The mathematical process of converting a number

written in the scale of 10 into the same number written in the scale of 2. ('des-mäl tō 'bīn-ə-re kən'vər-zhən )

**decision** [COMPUT SCI] The computer operation of determining if a certain relationship exists between words in storage or registers, and taking alternative courses of action; this is effected by conditional jumps or equivalent techniques. (di'sizh-ən )

**decision box** [COMPUT SCI] A flow-chart symbol indicating a decision instruction; usually diamond-shaped. (di'sizh-ən ,bäks )

**decision calculus** [SYS ENG] A guide to the process of decision-making, often outlined in the following steps: analysis of the decision area to discover applicable elements; location or creation of criteria for evaluation; appraisal of the known information pertinent to the applicable elements and correction for bias; isolation of the unknown factors; weighting of the pertinent elements, known and unknown, as to relative importance, and projection of the relative impacts on the objective, and synthesis into a course of action. (di'sizh-ən 'kal-kyä-läs )

**decision element** [ELECTR] A circuit that performs a logical operation such as "and," "or," "not," or "except" on one or more binary digits of input information representing "yes" or "no" and that expresses the result in its output. Also known as decision gate. (di'sizh-ən ,el-ə-mənt )

**decision gate** [ELECTR] See decision element. [NAV] In an instrument landing, that point along the path at which the pilot must decide to land or to execute a missed-approach procedure. (di'sizh-ən ,gät )

**decision instruction** See conditional jump. (di'sizh-ən in'strāk-shən )

**decision mechanism** [COMPUT SCI] In character recognition, that component part of a character reader which accepts the finalized version of the input character and makes an assessment as to its most probable identity. (di'sizh-ən ,mek-ə ,niz-əm )

**decision rule** [SYS ENG] In decision theory, the mathematical representation of a physical system which operates upon the observed data to produce a decision. (di'sizh-ən ,rül )

**decision support** [COMPUT SCI] The process of filtering, optimizing, and organizing mined information to support decision making. (di'sizh-ən sə,pōrt )

**decision support system** [COMPUT SCI] A computer-based system that enables management to interrogate the computer system on an ad hoc basis for various kinds of information on the organization and to predict the effect of potential decisions beforehand. Abbreviated DSS. (di'sizh-ən sə'pōrt ,sis-təm )

**decision table** [COMPUT SCI] **1.** A table of contingencies to be considered in the definition of a problem, together with the actions to be taken, sometimes used in place of a flow chart for program documentation. **2.** See DETAB. (di'sizh-ən ,tā-bōl )

**decision theory** [SYS ENG] A broad spectrum of concepts and techniques which have been developed to both describe and rationalize the process of decision making, that is, making a choice among several possible alternatives. { dī'sizh-ən, the-ə-rē }

**deck** [ENG] A magnetic-tape transport mechanism. { dek }

**deck switch** See gang switch. { 'dek, swich }

**declaration** See declarative statement. { ,dek-lə'rā-shən }

**declarative language** [COMPUT SCI] A nonprocedural programming language that allows the programmer to state the task to be accomplished without specifying the procedures needed to carry it out. { di,klar-əd-iv 'lɑŋ-gwɪj }

**declarative macroinstruction** [COMPUT SCI] An instruction in an assembly language which directs the compiler to take some action or take note of some condition and which does not generate any instruction in the object program. { dī|klar-əd-iv |mak-rō-ɪn|strək-shən }

**declarative markup language** [COMPUT SCI] A system of codes for identifying the subdivisions of a text-processing document, without carrying out the actual formatting. { di,klar-əd-iv 'mār-kəp ,lɑŋ-gwɪj }

**declarative statement** [COMPUT SCI] Any program statement describing the data which will be used or identifying the memory locations which will be required. Also known as declaration. { di |klar-əd-iv 'stāt-mənt }

**decode** [COMMUN] 1. To translate coded characters into a more understandable form. 2. See demodulate. { dē'kōd }

**decoded stream** [COMMUN] The decoded reconstruction of a compressed bit stream. { dē'kōd-əd 'strēm }

**decoder** [ELECTR] 1. A matrix of logic elements that selects one or more output channels, depending on the combination of input signals present. 2. See decoder circuit; matrix; tree. { dē'kōd-ər }

**decoder circuit** [ELECTR] A circuit that responds to a particular coded signal while rejecting others. Also known as decoder. { dē'kōd-ər ,sər-kət }

**decoding gate** [COMPUT SCI] The use of combinatorial logic in circuitry to select a device identified by a binary address code. Also known as recognition gate. { dē'kōd-ɪŋ ,gæt }

**decollator** [COMPUT SCI] A device which separates the sheets of continuous stationery that form the output of a computer printer into separate stacks. { dē'kō,lād-ər }

**decometer** [ELECTR] An adding-type phasemeter which rotates continuously and adds up the total number of degrees of phase shift between two signals, such as those received from two transmitters in the Decca navigation system. { də'kām-əd-ər }

**decommutation** [ELECTR] The process of recovering a signal from the composite signal previously created by a commutation process. { dē ,kām-yə'tā-shən }

**decommutator** [ELECTR] The section of a telemetering system that extracts analog data from a time-serial train of samples representing a multiplicity of data sources transmitted over a single radio-frequency link. { də'kām-yə,tād-ər }

**decoupling** [ELEC] Preventing transfer or feedback of energy from one circuit to another. { dē'kəp-lɪŋ }

**decoupling filter** [ELECTR] One of a number of low-pass filters placed between each of several amplifier stages and a common power supply. { dē'kəp-lɪŋ ,fɪl-tər }

**decoupling network** [ELEC] Any combination of resistors, coils, and capacitors placed in power supply leads or other leads that are common to two or more circuits, to prevent unwanted interstage coupling. { dē'kəp-lɪŋ ,net,wɜrk }

**decoy transponder** [ELECTR] A transponder that returns a strong signal when triggered directly by a radar pulse, to produce large and misleading target signals on enemy radar screens. { 'dē,kōɪ ,træn ,spæn-dər }

**decrement** [COMPUT SCI] 1. A specific part of an instruction word in some binary computers, thus a set of digits. 2. For a counter, to subtract 1 or some other number from the current value. { 'dek-rə-mənt }

**decrement field** [COMPUT SCI] That part of an instruction word which is used to modify the contents of a storage location or register. { 'dek-rə-mənt ,fɪld }

**decrypt** [ELECTR] To convert a cryptogram or series of electronic pulses into plain text by electronic means. { dē'kript }

**dedicated file server** [COMPUT SCI] A computer that operates solely to provide services to other computers in a particular local-area network and to manage the network operating system. Also known as dedicated server. { ,ded-ə,kād-əd 'fɪl ,sər-vər }

**dedicated line** [COMPUT SCI] A permanent communications link that is used solely to transmit information between a computer and a data-processing system. { 'ded-ə,kād-əd 'lɪn }

**dedicated server** See dedicated file server. { ,ded-ə,kād-əd ,sər-vər }

**dedicated terminal** [COMPUT SCI] A computer terminal that is permanently connected to a data-processing system by a communications link that is used only to transmit information between the two. { 'ded-ə,kād-əd 'tɜrm-ən-əl }

**deemphasis** [ENG ACOUS] A process for reducing the relative strength of higher audio frequencies before reproduction, to complement and thereby offset the preemphasis that was introduced to help override noise or reduce distortion. Also known as postemphasis; postequalization. { dē'em-fə-səs }

**deemphasis network** [ENG ACOUS] An RC filter inserted in a system to restore preemphasized signals to their original form. { dē'em-fə-səs ,net,wɜrk }

**deenergize** [ELEC] To disconnect from the source of power. { dē'en-ər,ɪz }

2] The section of a telecommu-  
nics system that extracts analog data from  
samples representing a number of  
sources transmitted over a com-  
munications link. {dē'kām-yā-tē-  
kōm} (telecommunications)

representing transfer or feedback  
from one circuit to another.

[TR] One of a number of lines  
connected between each of several  
common power supplies.

[ELEC] Any combination of  
resistors and capacitors placed in power  
leads that are common to several  
circuits, to prevent unwanted  
coupling between the circuits.  
[ELECTR] A transponder that  
is triggered directly by the  
cathode beam and misleads the  
operator's radar screens. {dē'kō-  
mūn-kā-tōn}

1. A specific part of a  
computer system, such as a  
counter, to subtract a value  
from the current value.

[COMPUT SCI] That part of a  
program that is used to modify the  
location or register of a  
data item.

vert a cryptogram or  
cipher into plain text by  
using a key. {dē'kript}

[COMPUT SCI] A computer  
program that provides services to other  
programs in a local-area network and  
operating system. Also known as  
defragmenter. {dē'kād-ə-kād-əd}

[COMPUT SCI] A permanent com-  
munications line used solely to transmit  
data between a computer and a data-  
base. {dē'kād-əd 'līn}

[COMPUT SCI] A computer ter-  
minal connected to a data-  
communications link that  
provides information between the  
terminal and the computer.

A process for reducing  
the audio frequencies  
of a signal to com-  
pensate for the  
frequency response  
that was introduced  
by the recording  
process or to reduce distortion  
caused by the  
recording process.

[ACOUSTICS] An RC filter  
used to store preemphasized  
signals. {dē'em-fā-sā-  
fīltər}

connect from the source

**deerhorn antenna** [ELECTROMAG] A dipole an-  
tenna whose ends are swept back to reduce wind  
resistance when mounted on an airplane. {dīr-  
hōrn an'ten-ə}

**de facto standard** [COMPUT SCI] A set of criteria  
for software, hardware, or communications pro-  
cedures that is widely accepted because of the  
dominance of a particular technology over others  
rather than the action of a recognized standards  
organization. {dē 'fak-tō 'stan-dard}

**default** [COMPUT SCI] A value automatically used  
or an action automatically carried out unless  
another is specified. {dī'folt}

**default printer** [COMPUT SCI] The printer that is auto-  
matically used by a program unless another print-  
er is specifically designated. {dī'folt ,print-ər}

**defect conduction** [SOLID STATE] Electric conduc-  
tion in a semiconductor by holes in the valence  
band. {dē'fekt kōn'dak-shən}

**defective track** [COMPUT SCI] Any circular path on  
the surface of a magnetic disk which is detected  
by the system as unable to accept one or more  
bits of data. {dī'fekt-tiv 'trak}

**deferred addressing** [COMPUT SCI] A type of in-  
direct addressing in which the address part of  
an instruction specifies a location containing  
an address, the latter in turn specifies another  
location containing an address, and so forth, the  
number of iterations being controlled by a preset  
counter. {dī'fərd əd'res-ŋ}

**deferred data item** [COMPUT SCI] A quantity or  
attribute that is assigned a value only at the time  
it is actually processed. {dī'fərd 'dād-ə ,īd-əm}

**deferred entry** [COMPUT SCI] The passing of con-  
trol of the central processing unit to a subroutine  
or to an entry point as the result of an asyn-  
chronous event. {dī'fərd 'en-trē}

**deferred mount** [COMPUT SCI] Postponement of  
the placement of a tape on a tape drive until it is  
actually needed, rather than when the program  
starts to run. {dī'fərd 'maunt}

**deferred processing** [COMPUT SCI] The making  
of computer runs which are postponed until  
nonpeak periods. {dī'fərd 'prās-es-ŋ}

**definite network** [COMPUT SCI] A sequential net-  
work in which no feedback loops exist.  
{dēf-ə-nat 'net,wōrk}

**definition** [COMMUN] The fidelity with which an  
imaging system conveys and reproduces an  
image. [ELECTR] The extent to which the fine-  
line details of a printed circuit correspond to the  
master drawing. {dēf-ə'nish-ən}

**deflection** [COMPUT SCI] Encouraging a potential  
attacker of a computer system to direct the  
attack elsewhere. [ELECTR] The displacement of  
an electron beam from its straight-line path  
by an electrostatic or electromagnetic field.  
{dī'flek-shən}

**deflection circuit** [ELECTR] A circuit which con-  
trols the deflection of an electron beam in a  
cathode-ray tube. {dī'flek-shən ,sər-kət}

**deflection coil** [ELECTR] One of the coils in a  
deflection yoke. {dī'flek-shən ,kōil}

**deflection defocusing** [ELECTR] Defocusing that  
becomes greater as deflection is increased in

a cathode-ray tube, because the beam hits the  
screen at a greater slant and the beam spot  
becomes more elliptical as it approaches the  
edges of the screen. {dī'flek-shən de,fō-kās-  
ŋ}

**deflection electrode** [ELECTR] An electrode  
whose potential provides an electric field that  
deflects an electron beam. Also known as  
deflection plate. {dī'flek-shən i,lek,trōd}

**deflection factor** [ELECTR] The reciprocal of the  
deflection sensitivity in a cathode-ray tube.  
{dī'flek-shən ,fak-tər}

**deflection-modulated indicator** See amplitude-  
modulated indicator. {dī'flek-shən |māj-ə,lād-  
əd 'īn-də,kād-ər}

**deflection plate** See deflection electrode.  
{dī'flek-shən ,plāt}

**deflection polarity** [ELECTR] Relationship be-  
tween the direction of a displacement of the  
cathode beam and the polarity of the applied  
signal wave. {dī'flek-shən pō'lār-əd-ē}

**deflection sensitivity** [ELECTR] The displacement  
of the electron beam at the target or screen of  
a cathode-ray tube per unit of change in the de-  
flection field; usually expressed in inches per volt  
applied between deflection electrodes or in  
inches per ampere in a deflection coil. {dī'flek-shən  
sen-sə'tiv-əd-ē}

**deflection voltage** [ELECTR] The voltage applied  
between a pair of deflection electrodes to pro-  
duce an electric field. {dī'flek-shən ,vōl-tij}

**deflection yoke** [ELECTR] An assembly of one or  
more electromagnets that is placed around the  
neck of an electron-beam tube to produce a  
magnetic field for deflection of one or more  
electron beams. Also known as scanning yoke;  
yoke. {dī'flek-shən ,yōk}

**defocus-dash mode** [ELECTR] A mode of  
cathode-ray tube storage of binary digits in  
which the writing beam is initially defocused so  
as to excite a small circular area on the screen;  
for one kind of binary digit it remains defocused,  
and for the other kind it is suddenly focused to a  
concentric dot and drawn out into a dash. {dē  
fō-kās 'dash ,mōd}

**defocus-focus mode** [ELECTR] A variation of the  
defocus-dash mode in which the focused dot is  
drawn out into a dash. {dēfō-kās |fō-kās ,mōd}

**defragmentation** [COMPUT SCI] A procedure in  
which portions of files on a computer disk  
are moved until all parts of each file occupy  
continuous sectors, resulting in a substan-  
tial improvement in disk access times. {dē  
'frag-man'tā-shən}

**defragmenter** [COMPUT SCI] A program that ana-  
lyzes storage locations of files on a computer disk  
and then carries out defragmentation. {dē  
'frag-men-tər}

**defruit** [ELECTR] To remove random asyn-  
chronous replies from the video input of a  
display unit in a secondary (beacon) radar

## degas

- system by such means as comparing the video signals on successive sweeps. { dē'frūt }
- degas** [ELECTR] To drive out and exhaust the gases occluded in the internal parts of an electron tube or other gastight apparatus, generally by heating during evacuation. { dē'gas }
- degauss** [ELECTR] To remove, erase, or clear information from a magnetic tape, disk, drum, or core. [ELECTROMAG] To neutralize (demagnetize) a magnetic field of, for example, television tube.
- degaussing coil** [ELECTROMAG] A plastic-encased coil, about 1 foot (0.3 meter) in diameter, that can be plugged into a 120-volt alternating-current wall outlet and moved slowly toward and away from a color television picture tube to demagnetize adjacent parts. { dē'gaüs-ij ,kóil }
- degenerate amplifier** [ELECTR] Parametric amplifier with a pump frequency exactly twice the signal frequency, producing an idler frequency equal to that of the signal input; it is considered as a single-frequency device. { di'jen-ə-rat 'am-plə-fi-ər }
- degeneration** [ELECTR] The loss or gain in an amplifier through unintentional negative feedback. { di'jen-ə'rā-shən }
- deglitcher** [ELECTR] A nonlinear filter or other special circuit used to limit the duration of switching transients in digital converters. { dē'glic-ər }
- degradation** [COMPUT SCI] Condition under which a computer operates when some area of memory or some units of peripheral equipment are not available to the user. { ,deg-rə'dā-shən }
- degradation failure** [ENGR] Failure of a device because of a shift in a parameter or characteristic which exceeds some previously specified limit. { ,deg-rə'dā-shən ,fāl-yər }
- degree of current rectification** [ELECTR] Ratio between the average unidirectional current output and the root mean square value of the alternating current input from which it was derived. { di'grē əv 'kar-ənt ,rek-tə-fə'kā-shən }
- degree of voltage rectification** [ELECTR] Ratio between the average unidirectional voltage and the root mean square value of the alternating voltage from which it was derived. { di'grē əv 'vól-tij ,rek-tə-fə'kā-shən }
- delon circuit breaker** [ELEC] Circuit breaker built so that the arc that forms when the circuit is broken is magnetically blown into a stack of insulated copper plates, giving the effect of a large number of short arcs in series; each arc becomes almost instantly deionized when the current drops to zero in the alternating current cycle, and the arc cannot reform. { dē't,ān 'sər-kət ,brāk-ər }
- deionization** [ELECTR] The return of an ionized gas to its neutral state after all sources of ionization have been removed, involving diffusion of ions to the container walls and volume recombination of negative and positive ions. { dē,ī-ən-ə'zā-shən }
- deionization potential** [ELECTR] The potential at which ionization of the gas in a gas-filled

- tube ceases and conduction stops. { dē,ī-ən-ə'zā-shən pə'ten-chəl }
- deionization time** [ELECTR] The time required for a gas tube to regain its pre-conduction characteristics after interruption of anode current, so that the grid regains control. Also called recontron time. { dē,ī-ən-ə'zā-shən ,tīm }
- de la Rue and Miller's law** [ELECTR] The law that in a field between two parallel plates, the sparking potential of a gas is a function of the product of gas pressure and sparking distance only. { del-ə'rū ən 'mil-ərz ,lò }
- delay** [COMMUN] 1. Time required for a signal to pass through a device or a conducting medium. 2. Time which elapses between the instant at which any designated point of a transmitted wave passes any two designated points of a transmission circuit; such delay is primarily determined by the constants of the circuit. { di'lā }
- delay circuit** See time-delay circuit. { di'lā ,sər-kət }
- delay counter** [COMPUT SCI] A counter which inserts a time delay in a sequence of events. { di'lā ,kaunt-ər }
- delay distortion** [ELECTR] Phase distortion in which the rate of change of phase shift with frequency of a circuit or system is not constant over the frequency range required for transmission. Also called envelope delay distortion. { di'lā ,di'stór-shən }
- delayed automatic gain control** [ELECTR] An automatic gain control system that does not operate until the signal exceeds a predetermined magnitude; weaker signals thus receive maximum amplification. Also known as biased automatic gain control; delayed automatic volume control; quiet automatic volume control. { di'lād ,əd-əj'mad-ik 'gān kən,trol }
- delayed automatic volume control** See delayed automatic gain control. { di'lād ,əd-əj'mad-ik 'vól-yəm kən,trol }
- delayed plan position indicator** [ELECTR] A plan position indicator in which initiation of the time base is delayed a fixed time after each transmitted pulse, to give expansion of the range scale for distant targets so that they show more clearly on the screen. { di'lād 'plan pə'zish-ən ,in-də ,kād-ər }
- delayed sweep** [ELECTR] A sweep whose beginning is delayed for a definite time after the pulse that initiates the sweep. { di'lād 'swēp }
- delay equalizer** [ELECTR] A corrective network used to make the phase delay or envelope delay of a circuit or system substantially constant over a desired frequency range. { di'lā 'ē-kwə-līz-ər }
- delay flip-flop** See D flip-flop. { di'lā 'flip,flap }
- delay/frequency distortion** [COMMUN] That form of distortion which occurs when the delay of a circuit or system is not constant over the frequency range required for transmissions. { di'lā ;frē-kwən-sē di'stór-shən }
- delay line** [ELECTR] 1. A transmission line (as dissipationless as possible), or an electric network approximation of it, which, if terminated in its characteristic impedance, will reproduce an

stops. { dē, t-ən }

the time required for conduction characteristic anode current, so also called recontrol m }

[ELECTR] The law parallel plates, the is a function of the sparking distance lō }

ired for a signal to conducting medium, een the instant at fa transmitted wave oints of a transmis- imarily determined t. { di'lā }

ircuit. { di'lā ,sər }

A counter which equence of events

ase distortion in phase shift with fre- is not constant over d for transmission, distortion. { di'lā }

[ELECTR] An au- m that does not ceeds a predeter- ignals thus receive o known as biased yed automatic vol- ic volume control ,trōl }

ontrol See delayed di'lād ,ōd-ō, mad-ik

[ELECTR] A plan i initiation of the d time after each ansion of the range at they show more lād 'plan pə'zish-ən

weep whose begin- time after the pulse i'lād 'swēp }

corrective network y or envelope delay itially constant over { di'lā 'ē-kwə, liz-ər } { di'lā 'flip, flāp }

COMMUN] That form hen the delay of a istant over the fre- ansmissions. { di

nsmission line (as or an electric net- ich, if terminated in will reproduce at its

output a waveform applied to its input terminals with little distortion, but at a time delayed by an amount dependent upon the electrical length of the line. Also known as artificial delay line.

2. A circuit component, analog or digital, in a radar system by which pulses may be delayed a controllable amount; used typically for pulse comparisons as in canceler circuits. { di'lā, līn }

**delay-line memory** See circulating memory. { di'lā, līn 'mem-rē }

**delay-line storage** See circulating memory. { di'lā, līn 'stōr-ij }

**delay multivibrator** [ELECTR] A monostable multivibrator that generates an output pulse a predetermined time after it is triggered by an input pulse. { di'lā ,māl-tə'vī,brād-ər }

**delay relay** [ELEC] A relay having predetermined delay between energization and closing of contacts or between deenergization and dropout. { di'lā 'rē,lā }

**delay time** [CONT SYS] The amount of time by which the arrival of a signal is retarded after transmission through physical equipment or systems. [ELECTR] The time taken for collector current to start flowing in a transistor that is being turned on from the cutoff condition. { di'lā ,tīm }

**delay unit** See transport delay unit. { di'lā ,yü-not }

**deleted representation** [COMPUT SCI] In paper tape codes, the superposition of a pattern of holes upon another pattern of holes representing a character, to effectively remove or obliterate the latter. { di'lēd-əd ,rep-rə,zen'tā-shən }

**deletion operator** [COMPUT SCI] The part of a data structure which allows components to be deleted. { di'lē-shən ,äp-ə,rād-ər }

**deletion record** [COMPUT SCI] A record which removes and replaces an existing record when it is added to a file. { di'lē-shən ,rek-ərd }

**delimiter** [COMPUT SCI] A character that separates items of data. { də'lim-əd-ər }

**Dellinger fadeout** [COMMUN] Type of fadeout that occurs during shortwave reception, believed to be caused by rapid shifting of ionosphere layers during solar eruptions. { 'del-ən-jər 'fād ,əut }

**delta** [ELECTR] The difference between a partial-select output of a magnetic cell in a one state and a partial-select output of the same cell in a zero state. { 'del-tə }

**delta connection** [ELEC] A combination of three components connected in series to form a triangle like the Greek letter delta. Also known as mesh connection. { 'del-tə kə'nek-shən }

**delta current** [ELEC] Electricity going through a delta connection. { 'del-tə ,kər-ənt }

**delta-gun tube** [ELECTR] A color television picture tube in which three electron guns, arranged in a triangle, provide electron beams that fall on phosphor dots on the screen, causing them to emit light in three primary colors; a shadow mask located just behind the screen ensures that each beam excites only dots of one color. { 'del-tə ,tīb }

**delta matching transformer** [ELEC] Impedance device used to match the impedance of an open-wire transmission line to an antenna; the two ends of the transmission line are fanned out so that the impedance of the line gradually increases; the ends of the transmission line are attached to the antenna at points of equal impedance, symmetrically located with respect to the center of the antenna. { 'del-tə ,māch-ŋ tranz,för-mər }

**delta modulation** [ELECTR] A pulse-modulation technique in which a continuous signal is converted into a binary pulse pattern, for transmission through low-quality channels. { 'del-tə ,mäj-ə'lā-shən }

**delta network** [ELEC] A set of three branches connected in series to form a mesh. { 'del-tə ,net,work }

**delta pulse code modulation** [ELECTR] A modulation system that converts audio signals into corresponding trains of digital pulses to give greater freedom from interference during transmission over wire or radio channels. { 'del-tə ,pals ,kōd ,mäj-ə'lā-shən }

**delta-sigma converter** See sigma-delta converter. { 'del-tə ,sig-mə kən'vörd-ər }

**delta-sigma modulator** See sigma-delta modulator. { 'del-tə ,sig-mə 'mä-jə,lād-ər }

**delta transformer** [ELEC] A three-phase electrical transformer in which the ends of the three windings are connected to form a triangle. { 'del-tə tranz'för-mər }

**delta-Y transformation** See Y-delta transformation. { 'del-tə ,wī ,tranz-far'mā-shən }

**deltic method** [ELECTR] A method of sampling incoming radar, sonar, seismic, speech, or other waveforms along with reference signals; compressing the samples in time, and comparing them by autocorrelation. { 'del-tik ,meth-əd }

**demagnetizer** [ELECTR] A device for removing undesired magnetism, as from the playback head of a tape recorder or from a recorded reel of magnetic tape that is to be erased. { də'mag-nə ,tī-zər }

**demand** See demand factor. { də'mənd }

**demand assignment multiple access** [COMMUN] The allocation of bandwidth in a communications system among multiple users based on demand, such as by multiplexing. Abbreviated DAMA. { di'mənd ə,sīn-mənt ,māl-tə-pəl 'ak,ses }

**demand-driven execution** [COMPUT SCI] A mode of carrying out a program in a data flow system in which no calculation is carried out until its results are demanded as input to another calculation. Also known as lazy evaluation. { də'mənd ,driv-ən ,ek-sə'kyü-shən }

**demand factor** [ELEC] The ratio of the maximum demand of a building for electric power to the total connected load. Also known as demand. { də'mənd ,fak-tər }

**demand limiter** See current limiter. { də'mənd ,lim-əd-ər }

**demand meter** [ENG] Any of several types of instruments used to determine a customer's maximum demand for electric power over an

## demand paging

appreciable time interval; generally used for billing industrial users. { dɑ'mɑnd ,mēd-ər }

**demand paging** [COMPUT SCI] The characteristic of a virtual memory system which retrieves only that part of a user's program which is required during execution. { dɑ'mɑnd ,pā-jŭŋ }

**demand processing** [COMPUT SCI] The processing of data by a computer system as soon as it is received, so that it is not necessary to store large amounts of raw data. Also known as immediate processing. { dɑ'mɑnd ,prās,es-ŭŋ }

**demand rate** [ELEC] The maximum amount of electric power that must be kept available to a customer. { dɑ'mɑnd ,rāt }

**demand reading** [COMPUT SCI] A method of carrying out input operations in which blocks of data are transmitted to the central processing unit as needed for processing. { dɑ'mɑnd ,rēd-ŭŋ }

**demand staging** [COMPUT SCI] Moving blocks of data from one storage device to another when programs request them. { dɑ'mɑnd ,stā-jŭŋ }

**demand writing** [COMPUT SCI] A method of carrying out output operations in which blocks of data are transmitted from the central processing unit as they are needed by the user. { dɑ'mɑnd ,rŭd-ŭŋ }

**Dember effect** [ELECTR] Creation of a voltage in a conductor or semiconductor by illumination of one surface. Also known as photodiffusion effect. { dām-bā 'fekt }

**demodifier** [COMPUT SCI] A data element used to restore part of an instruction which has been modified to its original value. { dē'mā-d-ə ,fī-ər }

**demodulate** [COMMUN] To recover the modulating wave from a modulated carrier. Also known as decode; detect. { dē'mā-j-ə ,lāt }

**demodulation** [COMMUN] The recovery, from a modulated carrier, of a signal having substantially the same characteristics as the original signal. { dē ,mā-j-ə 'lā-shən }

**demodulator** See detector. { dē'mā-j-ə ,lad-ər }

**demount** [COMPUT SCI] To take out a magnetic storage medium from a device that reads or writes on it. { dē'maunt }

**demountable pack** [COMPUT SCI] A disk pack that can be taken out and replaced by another. { dē'maunt-ə-bəl 'pak }

**demountable tube** [ELECTR] High-power radio tube having a metal envelope with porcelain insulation; can be taken apart for inspection and for renewal of electrodes. { dē'maunt-ə-bəl 'tüb }

**DEMS** See Digital Electronic Message Service.

**demultiplexer** [ELECTR] A device used to separate two or more signals that were previously combined by a compatible multiplexer and transmitted over a single channel. { dē ,məl-tə ,plek-sər }

**demultiplexing** [COMMUN] The separation of two or more channels previously multiplexed. { dē'məl-tə ,pleks-ŭŋ }

**demultiplexing circuit** [ELECTR] A circuit used to separate the signals that were combined for transmission by multiplex. { dē'məl-tə ,pleks-ŭŋ ,sər-kət }

**dense binary code** [COMPUT SCI] A code in which all possible states of the binary pattern are used. { 'dens |bŭ-nār-ē 'kōd }

**dense list** [COMPUT SCI] A list in which all the cells contain records of the file. { |dens |list }

**density modulation** [ELECTR] Modulation of an electron beam by making the density of the electrons in the beam vary with time. { 'den-səd-ē ,mā-j-ə 'lā-shən }

**density packing** [COMPUT SCI] In computers, the number of binary digit magnetic pulses stored on tape or drum per linear inch on a single track by a single head. { 'den-səd-ē ,pāk-ŭŋ }

**density step tablet** [COMMUN] Facsimile test chart consisting of a series of areas; density of the areas increases from a low value to a maximum value in steps. Also known as step tablet. { 'den-səd-ē 'step ,tab-lət }

**dependency** [COMPUT SCI] The necessity for a computer to complete work on some job before execution of another can begin. { dŭ'pen-dən-sē }

**dependent segment** [COMPUT SCI] In a database management system, a block of data that depends on data at a higher level for its full meaning. { dŭ'pen-dənt 'seg-mənt }

**deperm** See degauss. { dē'pərm }

**depletion** [ELECTR] Reduction of the charge-carrier density in a semiconductor below the normal value for a given temperature and doping level. { də'plē-shən }

**depletion layer** [ELECTR] An electric double layer formed at the surface of contact between a metal and a semiconductor having different work functions, because the mobile carrier charge density is insufficient to neutralize the fixed charge density of donors and acceptors. Also known as barrier layer (deprecated), blocking layer (deprecated), space-charge layer. { də'plē-shən ,lā-ər }

**depletion-layer capacitance** See barrier capacitance. { dŭ'plē-shən ,lā-ər kə'pas-əd-əns }

**depletion-layer rectification** [ELECTR] Rectification at the junction between dissimilar materials, such as a p-n junction or a junction between a metal and a semiconductor. Also known as barrier-layer rectification. { də'plē-shən ,lā-ər ,rek-tə-fə'kā-shən }

**depletion-layer transistor** [ELECTR] A transistor that relies directly on motion of carriers through depletion layers, such as spaciator. { də'plē-shən ,lā-ər tran'zŭs-tər }

**depletion mode** [ELECTR] Operation of a field-effect transistor in which current flows when the gate-source voltage is zero, and is increased or decreased by altering the gate-source voltage. { də'plē-shən ,mōd }

**depletion-mode HEMT** [ELECTR] A high-electron mobility transistor (HEMT) in which application of negative bias to the gate electrode cuts off the current between source and drain. Abbreviated D-HEMT. { də'plē-shən ,mōd ,āch,ē ,em'tē }

**depletion region** [ELECTR] The portion of the channel in a metal oxide field-effect transistor in which there are no charge carriers. { də'plē-shən ,rē-jən }

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**depolarization** [ELEC] The removal or prevention of polarization in a substance (for example, through the use of a depolarizer in an electric cell) or of polarization arising from the field due to the charges induced on the surface of a dielectric when an external field is applied. [dē,pō-lā-rā'zā-shən]

**depolarization factor** [ELEC] The ratio of the internal electric field induced by the charges on the surface of a dielectric when an external field is applied to the polarization of the dielectric. [dē,pō-lā-rā'zā-shən,fak-tər]

**deposit** [COMPUT SCI] To preserve the contents of a portion of a computer memory by copying it in a backing storage. [də'pāz-ət]

**deposited carbon resistor** [ELECTR] A resistor in which the resistive element is a carbon film pyrolytically deposited on a ceramic substrate. [də'pāz-ad-əd'kār-bən rī'zīs-tər]

**derating** [ELECTR] The reduction of the rating of a device to improve reliability or to permit operation at high ambient temperatures. [dē'rād-ŋ]

**derivative action** [CONT SYS] Control action in which the speed at which a correction is made depends on how fast the system error is increasing. Also known as derivative compensation; rate action. [də'riv-ad-iv,'ak-shən]

**derivative compensation** See derivative action. [də'riv-ad-iv,'kām-pan'sā-shən]

**derivative network** [CONT SYS] A compensating network whose output is proportional to the sum of the input signal and its derivative. Also known as lead network. [də'riv-ad-iv,'net,wər]

**derived sound system** [ENG ACOUS] A four-channel sound system that is artificially synthesized from conventional two-channel stereo sound by an adapter, to provide feeds to four loudspeakers for approximating quadrasonic sound. [də'rīvd'saund,'sīs-təm]

**DES** See data encryption standard.

**DeSauty's bridge** [ELEC] A four-arm bridge used to compare two capacitances; two adjacent arms contain capacitors in series with resistors, while the other two arms contain resistors only. Also known as Wien-DeSauty bridge. [də'sōd-ēz,'brīdʒ]

**descending sort** [COMPUT SCI] The arranging of data records from high to low sequence (9 to 0, and Z to A). [di'send-ŋ'sōrt]

**describing function** [CONT SYS] A function used to represent a nonlinear transfer function by an approximately equivalent linear transfer function; it is the ratio of the phasor representing the fundamental component of the output of the nonlinearity, determined by Fourier analysis, to the phasor representing a sinusoidal input signal. [di'skrīb-ŋ,'fəŋk-shən]

**descriptor** [COMPUT SCI] A word or phrase used to identify a document in a computer-based information storage and retrieval system. [di'skrīp-tər]

**desensitization** [COMMUN] Reduction in receiver sensitivity due to the presence of a high-level off-channel signal overloading the radio-frequency

amplifier or mixer stages, or causing automatic gain control action. [dē,sen-sə-tə'zā-shən]

**deserialize** [COMMUN] To convert a data stream from a serial stream of bits to parallel streams of bits. [dē'sir-ē-ə,'līz]

**designation** [COMPUT SCI] An item of data forming part of a computer record that indicates the type of record and thus determines how it is to be processed. [dez-əg'nā-shən]

**design-oriented system** [COMPUT SCI] A computer system developed primarily to maximize performance of hardware and software, rather than ease of use. [di'zīn'jōr-ē,ent-əd,'sīs-təm]

**desk calculator** [COMPUT SCI] A device that is used to perform arithmetic operations and is small enough to be conveniently placed on a desk. [desk'kal-kyə,lā-d-ər]

**desk check** See dry run. ['desk,'tʃek]

**desktop** [COMPUT SCI] In a graphical user interface, a screen on which frequently used software resources are represented by icons. ['desk,təp]

**desktop accessory software** [COMPUT SCI] A set of computer programs providing functions that simulate the office accessories normally found on a desktop, such as a notepad, appointment calendar, and calculator. Also known as desktop application, desktop organizer. [desk,təp'ik'ses-ə-rē'sōf,wər]

**desktop application** See desktop accessory software. [desk,təp,'ap-lə'kā-shən]

**desktop organizer** See desktop accessory software. [desk,təp,'ōr-gə,nīz-ər]

**desktop publishing** [COMPUT SCI] The use of a personal computer to produce printed output of high quality that is camera-ready for a printing facility. [desk,təp'pəb-lish-ŋ]

**despooler** [COMPUT SCI] Software that reads computer output information from a buffer and routes it to a printer. [dē'spūl-ər]

**despun antenna** [ELECTROMAG] Satellite directional antenna pointed continuously at earth by electrically or mechanically despinning the antenna at the same rate that the satellite is spinning for stabilization. [dē'spən'an'ten-ə]

**destination** [COMPUT SCI] The location (record, file, document, program, device, or disk) to which information is moved or copied. [des-tə'nā-shən]

**destination address** [COMPUT SCI] The location to which a jump instruction passes control in a program. [des-tə'nā-shən ə'dres]

**destination time** [COMPUT SCI] The time involved in a memory access plus the time required for indirect addressing. [des-tə'nā-shən,'tīm]

**destination warning mark** See tape mark. [des-tə'nā-shən,wōrn-ŋ,'mārk]

**destructive breakdown** [ELECTR] Breakdown of the barrier between the gate and channel of a field-effect transistor, causing failure of the transistor. [di'strəkt-iv'brāk,dəun]

**destructive memory** See destructive readout memory. [di'strəkt-iv'mem-rē]

**destructive read** [COMPUT SCI] Reading that partially or completely erases the stored information as it is being read. [di'strəkt-iv'rēd]

## destructive readout memory

**destructive readout memory** [COMPUT SCI] A memory type in which reading the contents of a storage location destroys the contents of that location. Also known as destructive memory. {di'stræk-tiv 'rēd,aut,mem-rē }

**destructive testing** [ENG] 1. Intentional operation of equipment until it fails, to reveal design weaknesses. 2. A method of testing a material that degrades the sample under investigation. {di'stræk-tiv 'test-ɪŋ }

**DETAB** [COMPUT SCI] A programming language based on COBOL in which problems can be specified in the form of decision tables. Acronym for decision table. {'dē,tæb }

**detachable plugboard** [COMPUT SCI] A control panel that can be removed from the computer or other system and exchanged for another without altering the positions of the plugs and cords. Also known as removable plugboard. {di'tætʃ-ə-bal 'pləg,bɔ:rd }

**detail chart** [COMPUT SCI] A flow chart representing every single step of a program. {'dē,tæɪl 'tʃɑ:rt }

**detail file** [COMPUT SCI] A file containing current or transient data used to update a master file or processed with the master file to obtain a specific result. Also known as transaction file. {'dē,tæɪl 'fɪl }

**detailing** See screening. {'dē,tæɪl-ɪŋ }

**detect** See demodulate. {di'tekt }

**detection** [COMMUN] The recovery of information from an electrical or electromagnetic signal. {di'tek-shən }

**detectivity** [ELECTR] The normalized radiation power required to give a signal from a photoconductor that is equal to the noise. {,dē 'tek'tiv-əd-ē }

**detector** [ELECTR] The stage in a receiver at which demodulation takes place; in a superheterodyne receiver this is called the second detector. Also known as demodulator; envelope detector. {di'tek-tər }

**detector balanced bias** [ELECTR] Controlling circuit used in radar systems for anticlutter purposes. {di'tek-tər 'bal-ənst 'bi:əs }

**determinant** [CONT SYS] The product of the partial return differences associated with the nodes of a signal-flow graph. {də'tər-mə-nənt }

**deterministic algorithm** See static algorithm. {də,tər-mə'nis-tik 'al-gə,rɪθ-əm }

**deterrence** [COMPUT SCI] Making an attack on a computer sufficiently difficult to discourage potential attackers. {di'tər-əns }

**detune** [ELECTR] To change the inductance or capacitance of a tuned circuit so its resonant frequency is different from the incoming signal frequency. {dē'tūn }

**detuning stub** [ELECTROMAG] Quarter-wave stub used to match a coaxial line to a sleeve-stub antenna; the stub detunes the outside of the coaxial feed line while tuning the antenna itself. {dē'tūn-ɪŋ 'stʌb }

**deuterium discharge tube** [ELECTR] A tube similar to a hydrogen discharge lamp, but with deuterium replacing the hydrogen; source of high-

intensity ultraviolet radiation for spectroscopic microanalysis. {dü'ti:ə-əm 'dis,tʃɑ:ɪj,tʌb }

**developer's toolkit** [COMPUT SCI] A collection of program subroutines that are used to help write an application program in a particular programming language or with a particular operating system. {di'vel-əp-ɔ:z 'tʌl,kɪt }

**development system** [COMPUT SCI] The computer and software that are used to create a computer program. {di'vel-əp-mənt 'sɪs-təm }

**development tool** [COMPUT SCI] A piece of hardware or software that is used to help design a computer or write a computer program. {di'vel-əp-mənt 'tʌl }

**deviation** [ENG] The difference between the actual value of a controlled variable and the desired value corresponding to the set point. {,dēv-ē'ā-shən }

**deviation absorption** [COMMUN] Distortion in a frequency-modulated receiver due to inadequate bandwidth, inadequate amplitude-modulation rejection, or inadequate discriminator linearity. {,dēv-ē'ā-shən əb,sɔ:p-shən }

**deviation ratio** [COMMUN] Ratio of the maximum frequency deviation to the maximum modulating frequency of a frequency-modulated system under specified conditions. {,dēv-ē'ā-shən 'rā-shō }

**device** [COMPUT SCI] A general-purpose term used, often indiscriminately, to refer to a computer component or the computer itself. [ELECTR] An electronic element that cannot be divided without destroying its stated function; commonly applied to active elements such as transistors and transducers. {di'vɪs }

**device address** [COMPUT SCI] The binary code which corresponds to a unique device, referred to when selecting this specific device. {di'vɪs ə'dres }

**device assignment** [COMPUT SCI] The use of a logical device number used in conjunction with an input/output instruction, and made to refer to a specific device. {di'vɪs ə'sɪn-mənt }

**device cluster** [COMPUT SCI] A collection of peripheral devices (usually terminals) that have a common control unit. {di'vɪs 'klʌs-tər }

**device control character** [COMPUT SCI] A special character used to direct a peripheral or communications device to perform a specific function. {di'vɪs kən'trɔ:l 'kɑ:ɪk-tər }

**device dependence** [COMPUT SCI] Property of a computer program that will operate only with specified hardware. {di'vɪs de,pen-dəns }

**device driver** [COMPUT SCI] A subroutine which handles a complete input/output operation. {di'vɪs 'drɪv-ər }

**device-end condition** [COMPUT SCI] The completion of an input/output operation, such as the transfer of a complete data block, recognized by the hardware in the absence of a byte count. {di'vɪs 'end kən'dɪʃ-ən }

**device end pending** [COMPUT SCI] A hardware error in which a peripheral device does not respond when addressed by the central processing unit, usually because the device has become inoperative. {di'vɪs 'end 'pend-ɪŋ }



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**device flag** [COMPUT SCI] A flip-flop output which indicates the ready status of an input/output device. { di'vīs ,flæg }

**device independence** [COMPUT SCI] Property of a computer program whose successful execution (without recompilation) does not depend on the type of physical unit associated with a given logical unit employed by the program. { di'vīs ,in-də'pen-dəns }

**device-independent colors** [COMPUT SCI] Colors produced by printers, monitors, and other output devices that have been modified to conform with a standard method of color description. { di'vīs ,in-də'pen-dənt 'kəl-ərz }

**device-name assignment** [COMPUT SCI] The designation of a peripheral device by a symbolic name rather than an address. { di'vīs ,nām ə ,sɪn-mənt }

**device number** [COMPUT SCI] The physical or logical number which refers to a specific input/output device. { di'vīs ,nām-bər }

**device selector** [COMPUT SCI] A circuit which gates data-transfer or command pulses to a specific input/output device. { di'vīs sɪ'lekt-tər }

**D flip-flop** [ELECTR] A flip-flop whose output is a function of the input which appeared one pulse earlier. Also known as delay flip-flop. { dē 'flɪp ,flɪp }

**D-frame** [COMMUN] A frame coded according to an MPEG-1 mode that uses dc (direct-current or zero-frequency) coefficients only. { dē ,frām }

**DG synchro amplifier** [ELECTR] Synchro differential generator driven by servosystem. { dē'jē ,sɪŋ-krō 'am-plə'fɪ-ər }

**D-HEMT** See depletion-mode HEMT.

**diac** See trigger diode. { 'dɪ,æk }

**diactor** [ELEC] Direct-acting automatic regulator for control of shunt generator voltage output. { dɪ'ækt-tər }

**diagnosis** [COMPUT SCI] The process of locating and explaining detectable errors in a computer routine or hardware component. { ,dɪ-əg'nō-səs }

**diagnostic check** See diagnostic routine. { ,dɪ-əg'nās-tɪk 'tʃek }

**diagnostic message** [COMPUT SCI] A statement produced automatically during some computer processing activity, such as program compilation, that provides information on the status of the computer or its software, particularly errors or potential problems. { ,dɪ-əg'nās-tɪk 'mes-ɪdʒ }

**diagnostic routine** [COMPUT SCI] A routine designed to locate a computer malfunction or a mistake in coding. Also known as diagnostic check; diagnostic subroutine; diagnostic test; error detection routine. { ,dɪ-əg'nās-tɪk rʊ'tɪn }

**diagnostics** [ENG] Information on what tests a device has failed and how they were failed, used to aid in troubleshooting. { ,dɪ-əg'nās-tɪks }

**diagnostic subroutine** See diagnostic routine. { ,dɪ-əg'nās-tɪk 'sʌb-rʊ,tɪn }

**diagnostic test** See diagnostic routine. { ,dɪ-əg'nās-tɪk 'test }

**diagnotor** [COMPUT SCI] A combination diagnostic and edit routine which questions un-

usual situations and notes the implied results. { ,dɪ-əg'nōd-ər }

**diagonal horn antenna** [ELECTROMAG] Horn antenna in which all cross sections are square and the electric vector is parallel to one of the diagonals; the radiation pattern in the far field has almost perfect circular symmetry. { dɪ'æg-ən-əl 'hɔrn an'ten-ə }

**diagram** [COMPUT SCI] A schematic representation of a sequence of subroutines designed to solve a problem; it is a coarser and less symbolic representation than a flow chart, frequently including descriptions in English words. { 'dɪ-ə ,grəm }

**dial** [COMMUN] In automatic telephone switching, either a type of calling device that, when wound up and released, generates pulses required for establishing connections or a pushbutton array that, with associated electronics, generates dual-tone multifrequency (DTMF) signals. [ENG] A separate scale or other device for indicating the value to which a control is set. { dɪl }

**dial backup** [COMMUN] A dial telephone line that can be used in case a point-to-point line fails, so that data transmission can continue. { 'dɪl 'bæk ,əp }

**dial central office** [COMMUN] Telephone or teletypewriter office where necessary automatic equipment is located for connecting two or more users together by wires for communications purposes. { 'dɪl ,sen-trəl 'ɔf-əs }

**dialect** [COMPUT SCI] A version of a programming language that differs from other versions in some respects but generally resembles them. { 'dɪ-ə ,lekt }

**dial exchange** [COMMUN] A telephone exchange area in which all subscribers originate their calls by dialing. { 'dɪl ɪks,tʃəŋdʒ }

**dialing key** [COMMUN] Method of dialing in which a set of numerical keys is used to originate dial pulses instead of a dial; generally used in connection with voice-frequency dialing. { 'dɪ-lɪŋ ,kē }

**dial jacks** [ELEC] Strip of jacks associated with and bridged to a regular out-going trunk jack circuit to provide a connection between the dial cords and the outgoing trunks. { 'dɪl ,jæks }

**dial key** [ELEC] Key unit of the subscriber's cord circuit used to connect the dial into the line. { 'dɪl ,kē }

**dial lamp** [ELEC] A small lamp used to illuminate a dial. { 'dɪl ,læmp }

**dial leg** [ELEC] Conductor in a circuit brought out for direct-current dial signaling. { 'dɪl ,leg }

**dial office** [COMMUN] Central office operating on dial signals. { 'dɪl ,ɔf-əs }

**dialog** [COMPUT SCI] A form of data processing involving an interaction between a computer system and a terminal operator who uses a keyboard and electronic display to enter data which the computer edits and may respond to. { 'dɪ-ə ,læɡ }

**dialog box** [COMPUT SCI] On a computer screen, a small window that is used to emphasize the importance of some action or to request an answer to a question. { 'dɪ-ə ,læɡ ,bæks }

## dial pulse interpreter

- dial pulse interpreter** [ELECTR] A device that converts the signaling pulses of a dial telephone to a form suitable for data entry to a computer. { 'dīl ,pʌls in'tɔr-prəd-ɔr }
- dial pulsing** See loop pulsing. { 'dīl ,pʌls-ɪŋ }
- dial telephone system** [COMMUN] A telephone system in which telephone connections between customers are ordinarily established by electronic and mechanical apparatus, controlled by manipulations of dials operated by calling parties. { 'dīl 'tel-ə,fōn ,sɪst-əm }
- dial tone** [COMMUN] A tone employed in a dial telephone system to indicate that the equipment is ready for dialing operation. { 'dīl ,tōn }
- dial-up** [COMMUN] 1. The service whereby a dial telephone can be used to initiate and effect station-to-station telephone calls. 2. In computer networks, pertaining to terminals which must dial up to receive service, as contrasted with those hand-wired or permanently connected into the network. { 'dīl ,ʌp }
- dial-up telephone system** [COMMUN] The switched telephone network that is regulated by national governments; operated in the United States by various carriers. { 'dīl ,ʌp 'tel-ə,fōn ,sɪs-təm }
- diamagnetic** [ELECTROMAG] Having a magnetic permeability less than 1, materials with this property are repelled by a magnet and tend to position themselves at right angles to magnetic lines of force. { 'dīəməg'nɛd-ɪk }
- diamond antenna** See rhombic antenna. { 'dī ,mɒnd ən'ten-ə }
- diamond circuit** [ELECTR] A gate circuit that provides isolation between input and output terminals in its off state, by operating transistors in their cutoff region; in the on state the output voltage follows the input voltage as required for gating both analog and digital signals, while the transistors provide current gain to supply output current on demand. { 'dī-mənd ,sɛr-kət }
- diaphragm** [ELECTROMAG] See iris. [ENG ACOUS] A thin, flexible sheet that can be moved by sound waves, as in a microphone, or can produce sound waves when moved, as in a loudspeaker. { 'dī-ə ,frəm }
- diaphragm horn** [ENG ACOUS] A horn that produces sound by means of a diaphragm vibrated by compressed air, steam, or electricity. { 'dī-ə ,frəm ,hɔrn }
- diathermy interference** [COMMUN] Television interference caused by diathermy equipment, produces a herringbone pattern in a dark horizontal band across the picture. { 'dī-ə ,θər-mē ,ɪn-tər'fɪr-əns }
- diathermy machine** [ELECTR] A radio-frequency oscillator, sometimes followed by rf amplifier stages, used to generate high-frequency currents that produce heat within some part of the body for therapeutic purposes. { 'dī-ə ,θər-mē mə ,ʃɛn }
- dibit** [COMPUT SCI] A pair of binary digits, used to specify one of four values. { 'dī ,bɪt }
- di-cap storage** [ELECTR] Device capable of holding data in the form of an array of charged capacitors and using diodes for controlling information flow. { 'dī ,kæp 'stɔr-ɪj }
- DICE** See digital intercontinental conversion equipment.
- dichotomizing search** [COMPUT SCI] A procedure for searching an item in a set, in which, at each step, the set is divided into two parts, one part being then discarded if it can be logically shown that the item could not be in that part. { 'dī'kɔd-ə ,mɪz-ɪŋ ,sɜrʃ }
- dichotomy** [COMPUT SCI] A division into two subordinate classes; for example, all white and all nonwhite, or all zero and all nonzero. { 'dī'kɔd-ə ,mē }
- dicing** [ELECTR] Sawing or otherwise machining a semiconductor wafer into small squares, or dice, from which transistors and diodes can be fabricated. { 'dɪs-ɪŋ }
- Dicke radiometer** [ELECTR] A radiometer-type receiver that detects weak signals in noise by modulating or switching the incoming signal before it is processed by conventional receiver circuits. { 'dɪk-ə ,ræd-ē'əm-əd-ər }
- dictionary** [COMPUT SCI] A table establishing the correspondence between specific words and their code representations. { 'dɪk-ʃən ,ner-ē }
- dictionary code** [COMPUT SCI] An alphabetical arrangement of English words and terms, associated with their code representations. { 'dɪk-ʃən ,ner-ē ,kɔd }
- dictionary encoding** [COMPUT SCI] A method of data compression in which each word is replaced by a number which is the position of that word in a dictionary. { 'dɪk-ʃən ,ner-ē in'kɔd-ɪŋ }
- dictionary sort** [COMPUT SCI] A sort algorithm that ignores capitalization, punctuation, and spaces, and treats numbers as if they were spelled out alphabetically. { 'dɪk-ʃən ,ner-ē ,sɔrt }
- die** [ELECTR] The tiny, sawed or otherwise machined piece of semiconductor material used in the construction of a transistor, diode, or other semiconductor device; plural is dice. { dī }
- dielectric** See dielectric material. { ,dī-ə'lek-trɪk }
- dielectric absorption** [ELEC] The persistence of electric polarization in certain dielectrics after removal of the electric field. { ,dī-ə'lek-trɪk əb'sɔrp-ʃən }
- dielectric amplifier** [ELECTR] An amplifier using a ferroelectric capacitor whose capacitance varies with applied voltage so as to give signal amplification. { ,dī-ə'lek-trɪk 'am-plə,fɪ-ər }
- dielectric antenna** [ELECTROMAG] An antenna in which a dielectric is the major component used to produce a desired radiation pattern. { ,dī-ə'lek-trɪk ən'ten-ə }
- dielectric breakdown** [ELECTR] Breakdown which occurs in an alkali halide crystal at field strengths on the order of  $10^6$  volts per centimeter. { ,dī-ə'lek-trɪk 'bræk ,daʊn }
- dielectric circuit** [ELEC] Any electric circuit which has capacitors. { ,dī-ə'lek-trɪk 'sɛr-kət }
- dielectric constant** [ELEC] 1. For an isotropic medium, the ratio of the capacitance of a

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capacitor filled with a given dielectric to that of the same capacitor having only a vacuum as dielectric. 2. More generally,  $1 + \gamma\chi$ , where  $\gamma$  is  $4\pi$  in Gaussian and cgs electrostatic units, or 1 in rationalized mks units, and  $\chi$  is the electric susceptibility tensor. Also known as relative dielectric constant, relative permittivity; specific inductive capacity (SIC). { ,dī-ā'lek-trik 'kän-stant }

**dielectric crystal** [ELEC] A crystal which is electrically nonconducting. { ,dī-ā'lek-trik 'krist-əl }

**dielectric current** [ELEC] The current flowing at any instant through a surface of a dielectric that is located in a changing electric field. { ,dī-ā'lek-trik 'kär-ənt }

**dielectric displacement** See electric displacement. { ,dī-ā'lek-trik dī'spläs-mənt }

**dielectric ellipsoid** [ELEC] For an anisotropic medium in which the dielectric constant is a tensor quantity **K**, the locus of points **r** satisfying  $\mathbf{r} \cdot \mathbf{K} \cdot \mathbf{r} = 1$ . { ,dī-ā'lek-trik ə'lip,sboid }

**dielectric fatigue** [ELECTR] The property of some dielectrics in which resistance to breakdown decreases after a voltage has been applied for a considerable time. { ,dī-ā'lek-trik fə'ti:g }

**dielectric field** [ELEC] The average total electric field acting upon a molecule or group of molecules inside a dielectric. Also known as internal dielectric field. { ,dī-ā'lek-trik 'fēld }

**dielectric film** [ELEC] A film possessing dielectric properties; used as the central layer of a capacitor. { ,dī-ā'lek-trik 'film }

**dielectric flux density** See electric displacement. { ,dī-ā'lek-trik 'flæks,dən-səd-ē }

**dielectric gas** [ELEC] A gas having a high dielectric constant, such as sulfur hexafluoride. { ,dī-ā'lek-trik 'gæs }

**dielectric heating** [ELEC] Heating of a nominally electrical insulating material due to its own electrical (dielectric) losses, when the material is placed in a varying electrostatic field. { ,dī-ā'lek-trik 'hēd-iŋ }

**dielectric hysteresis** See ferroelectric hysteresis. { ,dī-ā'lek-trik hi-stə're-səs }

**dielectric leakage** [ELEC] A very small steady current that flows through a dielectric subject to a steady electric field. { ,dī-ā'lek-trik 'lēk-iŋ }

**dielectric lens** [ELECTROMAG] A lens made of dielectric material so that it refracts radio waves in the same manner that an optical lens refracts light waves, used with microwave antennas. { ,dī-ā'lek-trik 'lens }

**dielectric-lens antenna** [ELECTROMAG] An aperture antenna in which the beam width is determined by the dimensions of a dielectric lens through which the beam passes. { ,dī-ā'lek-trik 'lens ən'ten-ə }

**dielectric loss** [ELECTROMAG] The electric energy that is converted into heat in a dielectric subjected to a varying electric field. Also known as dielectric absorption. { ,dī-ā'lek-trik 'lōs }

**dielectric loss angle** [ELEC] difference between  $90^\circ$  and the dielectric phase angle. { ,dī-ā'lek-trik 'lōs ,aŋ-gəl }

**dielectric loss factor** [ELEC] Product of the dielectric constant of a material and the tangent of its dielectric loss angle. { ,dī-ā'lek-trik 'lōs ,fak-tər }

**dielectric matching plate** [ELECTROMAG] In waveguide technique, a dielectric plate used as an impedance transformer for matching purposes. { ,dī-ā'lek-trik 'mach-iŋ ,plāt }

**dielectric material** [MATER] Also known as dielectric. 1. A material which is an electrical insulator or in which an electric field can be sustained with a minimum dissipation of power. 2. In a more general sense, any material other than a condensed state of a metal. { ,dī-ā'lek-trik mə'ti-rē-ə }

**dielectric phase angle** [ELEC] Angular difference in phase between the sinusoidal alternating potential difference applied to a dielectric and the component of the resulting alternating current having the same period as the potential difference. { ,dī-ā'lek-trik 'fāz ,aŋ-gəl }

**dielectric polarization** See polarization. { ,dī-ā'lek-trik ,pō-lə-rə'zā-shən }

**dielectric power factor** [ELEC] Cosine of the dielectric phase angle (or sine of the dielectric loss angle). { ,dī-ā'lek-trik 'paʊər ,fak-tər }

**dielectric-rod antenna** [ELECTROMAG] A surface-wave antenna in which an end-fire radiation pattern is produced by propagation of a surface wave on a tapered dielectric rod. { ,dī-ā'lek-trik 'rād ən'ten-ə }

**dielectric shielding** [ELEC] The reduction of an electric field in some region by interposing a dielectric substance, such as polystyrene, glass, or mica. { ,dī-ā'lek-trik 'shēld-iŋ }

**dielectric strength** [ELEC] The maximum electrical potential gradient that a material can withstand without rupture, usually specified in volts per millimeter of thickness. Also known as electric strength. { ,dī-ā'lek-trik 'streŋkθ }

**dielectric susceptibility** See electric susceptibility. { ,dī-ā'lek-trik sa,səp-tə'bil-əd-ē }

**dielectric test** [ELEC] A test involving application of a voltage higher than the rated value for a specified time, to determine the margin of safety against later failure of insulating materials. { ,dī-ā'lek-trik 'test }

**dielectric waveguide** [ELEC] A waveguide consisting of a dielectric cylinder surrounded by air. { ,dī-ā'lek-trik 'wāv,gīd }

**dielectric wedge** [ELECTROMAG] A wedge-shaped piece of dielectric used in a waveguide to match its impedance to that of another waveguide. { ,dī-ā'lek-trik 'wej }

**dielectric wire** [ELECTROMAG] A dielectric waveguide used to transmit ultra-high-frequency radio waves short distances between parts of a circuit. { ,dī-ā'lek-trik 'wīr }

**difference amplifier** See differential amplifier. { 'dīf-rəns ,əm-plə,fi-ər }

**difference channel** [ENG ACOUS] An audio channel that handles the difference between the

## difference detector

- signals in the left and right channels of a stereophonic sound system. { 'dif-rəns ,chən-əl }
- difference detector** [ELECTR] A detector circuit in which the output is a function of the difference between the amplitudes of the two input waveforms. { 'dif-rəns di,tek-tər }
- difference encoding** [COMPUT SCI] A method of data compression that takes advantage of a sequence of data that differs little from one value to the next by encoding each value as the difference from the previous value. { 'dif-rəns in,kōd-ɪŋ }
- difference equation** [MATH] An equation expressing a functional relationship of one or more independent variables, one or more functions dependent on these variables, and successive differences of these functions. { 'dif-rəns i'kwā-zhən }
- difference in depth modulation** [COMMUN] In directive systems employing overlapping lobes with modulated signals, a ratio obtained by subtracting from the percentage of modulation of the larger signal the percentage of modulation of the smaller signal and dividing by 100. { 'dif-rəns 'in ,dɛpθ ,māj-ə'lā-shən }
- difference mapping** [COMMUN] A method of coding information in which a sample value is presented as an error term formed by the difference between the sample and the previous sample. { 'dif-rəns ,mæp-ɪŋ }
- differential** [CONT SYS] The difference between levels for turn-on and turn-off operation in a control system. { ,dif-ə'ren-chəl }
- differential amplifier** [ELECTR] An amplifier whose output is proportional to the difference between the voltages applied to its two inputs. Also called difference amplifier. { ,dif-ə'ren-chəl 'am-plə,fɪ-ər }
- differential analyzer** [COMPUT SCI] A mechanical or electromechanical device designed primarily to solve differential equations. { ,dif-ə'ren-chəl 'ən-ə,lɪz-ər }
- differential backup** [COMPUT SCI] Backup of only files that have been changed or added since the last backup. { ,dif-ə'ren-chəl 'bæk,əp }
- differential capacitance** [ELECTR] The derivative with respect to voltage of a charge characteristic, such as an alternating charge characteristic or a mean charge characteristic, at a given point on the characteristic. { ,dif-ə'ren-chəl kə'pæs-əd-əns }
- differential capacitor** [ELEC] A two-section variable capacitor having one rotor and two stators so arranged that as capacitance is reduced in one section it is increased in the other. { ,dif-ə'ren-chəl kə'pæs-əd-ər }
- differential comparator** [ELECTR] A comparator having at least two high-gain differential-amplifier stages, followed by level-shifting and buffering stages, as required for converting a differential input to single-ended output for digital logic applications. { ,dif-ə'ren-chəl kəm'pær-əd-ər }
- differential compound motor** [ELEC] A direct-current motor whose speed may be made nearly constant or may be adjusted to increase with increasing load. { ,dif-ə'ren-chəl 'kæm,pəʊnd ,mōd-ər }
- differential delay** [COMMUN] The difference between the maximum and minimum frequency delays occurring across a band. { ,dif-ə'ren-chəl dɪ'lā }
- differential discriminator** [ELECTR] A discriminator that passes only pulses whose amplitudes are between two predetermined values, neither of which is zero. { ,dif-ə'ren-chəl dɪ'skrɪm-ə ,nād-ər }
- differential duplex system** [ELECTR] System in which the sent currents divide through two mutually inductive sections of a receiving apparatus, connected respectively to the line and to a balancing artificial line in opposite directions, so that there is substantially no net effect on the receiving apparatus; the received currents pass mainly through one section, or through the two sections in the same direction, and operate the apparatus. { ,dif-ə'ren-chəl 'dju,pleks ,sɪs-təm }
- differential electromagnet** [ELEC] An electromagnet having part of its winding opposed to the other part, so that the force exerted by the magnet can be adjusted. { ,dif-ə'ren-chəl i ,lek-trō'mæg-nət }
- differential encoding** [COMMUN] A method of compressing television signals by transmitting only differences between pixels in neighboring lines and successive frames. { ,dif-ə'ren-chəl in'kōd-ɪŋ }
- differential frequency circuit** [ELEC] A circuit that provides a continuous output frequency equal to the absolute difference between two continuous input frequencies. { ,dif-ə'ren-chəl 'frē-kwən-sē 'sər-kət }
- differential frequency meter** [ENG] A circuit that converts the absolute frequency difference between two input signals to a linearly proportional direct-current output voltage that can be used to drive a meter, recorder, oscilloscope, or other device. { ,dif-ə'ren-chəl 'frē-kwən-sē ,mēd-ər }
- differential gain control** [ELECTR] Device for altering the gain of a radio receiver according to expected change of signal level, to reduce the amplitude differential between the signals at the output of the receiver. Also known as gain sensitivity control. { ,dif-ə'ren-chəl ,gæn kən'trōl }
- differential galvanometer** [ELEC] A galvanometer having a magnetic needle which is free to rotate in the magnetic field produced by currents flowing in opposite directions through two separate identical coils, so that there is no deflection when the currents are equal. { ,dif-ə'ren-chəl ,gal-və'nām-əd-ər }
- differential game** [CONT SYS] A two-sided optimal control problem. { ,dif-ə'ren-chəl 'gæm }
- differential gap controller** [CONT SYS] A two-position (on-off) controller that actuates when the manipulated variable reaches the high or low value of its range (differential gap). { ,dif-ə'ren-chəl 'gap kən'trōl-ər }

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**differential generator** [ELEC] A generator whose shunt and series windings are opposed to each other, to limit the maximum current. {,dif-ə'ren-chəl 'jen-ə,rād-ər }

**differential input** [ELECTR] Amplifier input circuit that rejects voltages that are the same at both input terminals and amplifies the voltage difference between the two input terminals. {,dif-ə'ren-chəl 'in,püt }

**differential-input capacitance** [ELECTR] The capacitance between the inverting and noninverting input terminals of a differential amplifier. {,dif-ə'ren-chəl 'in,püt kə'pas-əd-əns }

**differential-input impedance** [ELECTR] The impedance between the inverting and noninverting input terminals of a differential amplifier. {,dif-ə'ren-chəl 'in,püt im'ped-əns }

**differential-input measurement** [ELECTR] A measurement in which the two inputs to a differential amplifier are connected to two points in a circuit under test and the amplifier displays the difference voltage between the points. {,dif-ə'ren-chəl 'in,püt 'mez-ər-mənt }

**differential-input resistance** [ELECTR] The resistance between the inverting and noninverting input terminals of a differential amplifier. {,dif-ə'ren-chəl 'in,püt r'izis-təns }

**differential-input voltage** [ELECTR] The maximum voltage that can be applied across the input terminals of a differential amplifier without causing damage to the amplifier. {,dif-ə'ren-chəl 'in,püt 'völt,ij }

**differential instrument** [ENG] Galvanometer or other measuring instrument having two circuits or coils, usually identical, through which currents flow in opposite directions; the difference or differential effect of these currents actuates the indicating pointer. {,dif-ə'ren-chəl 'in-strə-mənt }

**differential keying** [ELECTR] Method for obtaining chirp-free break-in keying of continuous wave transmitters by using circuitry that arranges to have the oscillator turn on fast before the keyed amplifier stage can pass any signal, and turn off fast after the keyed amplifier stage has cut off. {,dif-ə'ren-chəl 'kē-ig }

**differentially coherent phase-shift keying** See differential phase-shift keying. {,dif-ə'ren-chəl-ē kō'hir-ənt 'fāz,shift,kē-ig }

**differential microphone** See double-button microphone. {,dif-ə'ren-chəl 'mīkrə,fōn }

**differential-mode gain** [ELECTR] The ratio of the output voltage of a differential amplifier to the differential-mode input voltage. {,dif-ə'ren-chəl 'mōd,gān }

**differential-mode input** [ELECTR] The voltage difference between the two inputs of a differential amplifier. {,dif-ə'ren-chəl 'mōd,in,püt }

**differential-mode signal** [ELECTR] A signal that is applied between the two ungrounded terminals of a balanced three-terminal system. {,dif-ə'ren-chəl 'mōd,sig-nəl }

**differential modulation** [COMMUN] Modulation in which the choice of the significant condition for any signal element is dependent on

the choice for the previous signal element. {,dif-ə'ren-chəl māj-ə'lā-shən }

**differential motor** [ELEC] A direct-current motor whose shunt and series field windings oppose each other to produce a constant speed. {,dif-ə'ren-chəl 'mōd-ər }

**differential operational amplifier** [ELECTR] An amplifier that has two input terminals, used with additional circuit elements to perform mathematical functions on the difference in voltage between the two input signals. {,dif-ə'ren-chəl əp-ə'rā-shən-əl 'am-plā,fi-ər }

**differential output voltage** [ELECTR] The difference between the values of two ac voltages, 180° out of phase, present at the output terminals of an amplifier when a differential input voltage is applied to the input terminals of the amplifier. {,dif-ə'ren-chəl 'aüt,püt,völt,ij }

**differential phase** [ELECTR] Difference in output phase of a small high-frequency sine-wave signal at two stated levels of a low-frequency signal on which it is superimposed in a video transmission system. {,dif-ə'ren-chəl 'fāz }

**differential phase-shift keying** [COMMUN] Form of phase-shift keying in which the reference phase for a given keying interval is the phase of the signal during the preceding keying interval. Also known as differentially coherent phase-shift keying. {,dif-ə'ren-chəl 'fāz,shift,kē-ig }

**differential-pressure pickup** [ELEC] An instrument that measures the difference in pressure between two pressure sources and translates this difference into a change in inductance, resistance, voltage, or some other electrical quality. {,dif-ə'ren-chəl 'presh-ər,pik,əp }

**differential pulse-code modulation** [COMMUN] A type of pulse-code modulation in which an analog signal is sampled and the difference between its actual value and its predicted value, based on a previous sample or samples, is quantized; for example, in television transmission, only the differences between the continuous picture elements on the scanning lines are transmitted, enabling the bandwidth of the signal to be reduced. Abbreviated DPCM. {,dif-ə'ren-chəl 'pəls,kōd,māj-ə'lā-shən }

**differential relay** [ELEC] A two-winding relay that operates when the difference between the currents in the two windings reaches a predetermined value. {,dif-ə'ren-chəl 'rē,lā }

**differential selsyn** [ELEC] Selsyn in which both rotor and stator have similar windings that are spread 120° apart; position of the rotor corresponds to the algebraic sum of the fields produced by the stator and rotor. {,dif-ə'ren-chəl 'sel-sən }

**differential signal** [ELECTR] In a circuit, a signal that is the voltage difference between two nodes, neither of which is at ground potential. Also known as floating signal. {,dif-ə'ren-chəl 'sig-nəl }

**differential stage** [ELECTR] A symmetrical amplifier stage with two inputs balanced against each other so that with no input signal or equal input signals, no output signal exists, while a signal

## differential synchro

- to either input, or an input signal unbalance, produces an output signal proportional to the difference. { ,dif-ə'ren-chəl 'stāj }
- differential synchro** See synchro differential receiver; synchro differential transmitter. { ,dif-ə'ren-chəl 'siŋ-krō }
- differential transducer** [ELEC] A transducer that simultaneously senses two separate sources and provides an output proportional to the difference between them. { ,dif-ə'ren-chəl tranz'dü-sər }
- differential transformer** [ELEC] A transformer used to join two or more sources of signals to a common transmission line. { ,dif-ə'ren-chəl tranz'fór-mər }
- differential-transformer transducer** [ELEC] A transducer in which movement of the iron core of a transformer varies the output voltage across two series-opposing secondary windings. { ,dif-ə'ren-chəl tranz'fór-mər tranz'dü-sər }
- differential voltage gain** [ELECTR] Ratio of the change in output signal voltage at either terminal, or in a differential device, to the change in signal voltage applied to either input terminal, all voltages being measured to common reference. { ,dif-ə'ren-chəl 'vól-tij ,gān }
- differential voltmeter** [ELEC] A voltmeter that measures only the difference between a known voltage and an unknown voltage. { ,dif-ə'ren-chəl 'vólt,méd-ər }
- differential winding** [ELEC] A winding whose magnetic field opposes that of a nearby winding. { ,dif-ə'ren-chəl 'wínd-íŋ }
- differential wound field** [ELEC] Type of motor or generator field having both series and shunt coils that are connected to oppose each other. { ,dif-ə'ren-chəl 'waúnd 'fíeld }
- differentiating circuit** [ELEC] A circuit whose output voltage is proportional to the rate of change of the input voltage. Also known as differentiating network. { ,dif-ə'ren-chē,ād-íŋ 'sər-kət }
- differentiating network** See differentiating circuit. { ,dif-ə'ren-chē,ād-íŋ 'net,wər }
- differentiator** [ELECTR] A device whose output function is proportional to the derivative, or rate of change, of the input function with respect to one or more variables. { ,dif-ə'ren-chē,ād-ər }
- diffractional pulse-height discriminator** See pulse-height selector. { di'frak-shən-əl 'pəls,hīt di'skrím-ə,nād-ər }
- diffused-alloy transistor** [ELECTR] A transistor in which the semiconductor wafer is subjected to gaseous diffusion to produce a nonuniform base region, after which alloy junctions are formed in the same manner as for an alloy-junction transistor; it may also have an intrinsic region, to give a *pnip* unit. Also known as drift transistor. { də'fyúzd 'al,oi tranz'zís-tər }
- diffused-base transistor** [ELECTR] A transistor in which a nonuniform base region is produced by gaseous diffusion; the collector-base junction is also formed by gaseous diffusion, while the emitter-base junction is a conventional alloy junction. { də'fyúzd 'bās tranz'zís-tər }
- diffused emitter-collector transistor** [ELECTR] A transistor in which both the emitter and collector are produced by diffusion. { də'fyúzd i'mid-ər kə'lek-tər tranz'zís-tər }
- diffused junction** [ELECTR] A semiconductor junction that has been formed by the diffusion of an impurity within a semiconductor crystal. { də'fyúzd 'jəŋk-shən }
- diffused-junction rectifier** [ELECTR] A semiconductor diode in which the *pn* junction is produced by diffusion. { də'fyúzd 'jəŋk-shən 'rek-tə,fí-ər }
- diffused-junction transistor** [ELECTR] A transistor in which the emitter and collector electrodes have been formed by diffusion by an impurity metal into the semiconductor wafer without heating. { də'fyúzd 'jəŋk-shən tranz'zís-tər }
- diffused mesa transistor** [ELECTR] A diffused-junction transistor in which an *n*-type impurity is diffused into one side of a *p*-type wafer; a second *pn* junction, required for the emitter, is produced by alloying or diffusing a *p*-type impurity into the newly formed *n*-type surface; after contacts have been applied, undesired diffused areas are etched away to create a flat-topped peak called a mesa. { də'fyúzd 'mā-sə tranz'zís-tər }
- diffused resistor** [ELECTR] An integrated-circuit resistor produced by a diffusion process in a semiconductor substrate. { də'fyúzd rí'zís-tər }
- diffusion** [ELECTR] A method of producing a junction by diffusing an impurity metal into a semiconductor at a high temperature. { də'fyú-zhən }
- diffusion capacitance** [ELECTR] The rate of change of stored minority-carrier charge with the voltage across a semiconductor junction. { də'fyú-zhən kə'pas-əd-əns }
- diffusion theory** [ELEC] The theory that in semiconductors, where there is a variation of carrier concentration, a motion of the carriers is produced by diffusion in addition to the drift determined by the mobility and the electric field. { də'fyú-zhən ,thē-ə-rē }
- diffusion transistor** [ELECTR] A transistor in which current flow is a result of diffusion of carriers, donors, or acceptors, as in a junction transistor. { də'fyú-zhən tranz'zís-tər }
- digicom** [COMMUN] A wire communication system that transmits speech signals in the form of corresponding trains of pulses and transmits digital information directly from computers, radar, tape readers, teleprinters, and telemetering equipment. { 'dij-ə,kəm }
- digicon** [ELECTR] An image tube in which the image produced by electrons from the photocathode is focused directly on a silicon diode array and each incoming photoelectron produces an electrical pulse that is amplified and recorded. { 'dij-ə,kān }
- digit** [COMPUT SCI] In a decimal digital computer, the space reserved for storage of one digit of information. { 'dij-ət }
- digit absorbing selector** [ELECTR] Dial switch arranged to set up and then fall back on the first one of two digits dialed; it then operates on the next digit dialed. { 'dij-ət əb'sɔrb-íŋ si'lek-tər }
- digital** [COMPUT SCI] Pertaining to data in the form of digits. { 'dij-əd-əl }

d i'mid-ər

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**digital audio broadcasting** [COMMUN] The radio broadcasting of audio signals encoded in digital form. Abbreviated DAB. ( 'dij-əd-əl 'dɔd-ē-ō 'brɔd,kast-ŋ )

**digital audio tape** [COMPUT SCI] A magnetic tape on which sound is recorded and played back in digital form. Abbreviated DAT. ( 'dij-əd-əl 'dɔd-ē-ō ,tāp )

**digital camera** [ELECTR] A television camera that breaks up a picture into a fixed number of pixels and converts the light intensity (or the intensities of each of the primary colors) in each pixel to one of a finite set of numbers. ( 'dij-əd-əl 'kəm-rə )

**digital channel** [COMMUN] A transmission path that carries only digital signals. ( 'dij-əd-əl 'chan-əl )

**digital circuit** [ELECTR] A circuit designed to respond at input voltages at one of a finite number of levels and, similarly, to produce output voltages at one of a finite number of levels. ( 'dij-əd-əl 'sər-kət )

**digital circuit multiplication equipment** [COMMUN] Equipment that uses digital compression techniques to increase the capacity of digital satellite and cable links carrying voice, facsimile, and voice-frequency modem traffic. ( 'dij-əd-əl 'sər-kət ,məl-to-plə'kā-shən i,kwip-mənt )

**digital communications** [COMMUN] System of telecommunications employing a nominally discontinuous signal that changes in frequency, amplitude, time, or polarity. ( 'dij-əd-əl kə,myū-nə'kā-shənz )

**digital comparator** [ELECTR] A comparator circuit operating on input signals at discrete levels. Also known as discrete comparator. ( 'dij-əd-əl kəm'par-əd-ər )

**digital computer** [COMPUT SCI] A computer operating on discrete data by performing arithmetic and logic processes on these data. ( 'dij-əd-əl kəm'pyūd-ər )

**digital control** [CONT SYS] The use of digital or discrete technology to maintain conditions in operating systems as close as possible to desired values despite changes in the operating environment. ( 'dij-əd-əl kən'trɔl )

**digital converter** [ELECTR] A device that converts voltages to digital form; examples include analog-to-digital converters, pulse-code modulators, encoders, and quantizing encoders. ( 'dij-əd-əl kən'vərd-ər )

**digital counter** [ELECTR] A discrete-state device (one with only a finite number of output conditions) that responds by advancing to its next output condition. ( 'dij-əd-əl 'kaunt-ər )

**digital data** [COMPUT SCI] Data that are electromagnetically stored in the form of discrete digits. ( 'dij-əd-əl 'dād-ə )

**digital data modulation system** [COMMUN] A digital communications system in which the information source consists of a finite number of discrete messages which are coded into a sequence of waveforms or symbols, each one selected from a specified and finite set. ( 'dij-əd-əl 'dād-ə ,mäj-ə'lā-shən ,sis-təm )

**digital data recorder** [COMPUT SCI] Electronic device that converts continuous electrical analog signals into number (digital) values and records these values onto a data log via a high-speed typewriter. ( 'dij-əd-əl 'dād-ə rɪ,kɔrd-ər )

**digital data service** [COMMUN] A telephone communication system developed specifically for digital data, using existing local digital lines combined with data-under-voice microwave transmission facilities. Abbreviated DDS. ( 'dij-əd-əl 'dād-ə ,sər-vəs )

**digital delay** [ENG ACOUS] A device for introducing delay in the audio signal in a sound-reproducing system, which converts the audio signal to digital format and stores it in a digital shift register before converting it back to analog form. ( 'dij-əd-əl dɪ'lā-ər )

**digital delay generator** [ELECTR] A high-precision adjustable time-delay generator in which delays may be selected in increments such as 1, 10, or 100 nanoseconds by means of panel switches and sometimes by remote programming. ( 'dij-əd-əl dɪ'lā ,jen-ə'rād-ər )

**digital differential analyzer** [COMPUT SCI] A differential analyzer which uses numbers to represent analog quantities. Abbreviated DDA. ( 'dij-əd-əl ,dɪf-ə,ren-chaɪ 'n-ə,lɪz-ər )

**digital display** [COMPUT SCI] A display in which the result is indicated in directly readable numerals. ( 'dij-əd-əl dɪ'splā )

**Digital Electronic Message Service** [COMMUN] A communication system whose purpose is to provide efficient means for two-way high-speed data communications, transfer of graphic images (facsimile), and teleconferencing between cities and within a city environment. Abbreviated DEMS. ( 'dij-əd-əl i,lek'trɔn-ɪk 'mes-ɪj ,sər-vəs )

**digital filter** [ELECTR] An electrical filter that responds to an input which has been quantified, usually as pulses. ( 'dij-əd-əl 'fɪl-tər )

**digital format** [COMPUT SCI] Use of discrete integral numbers in a given base to represent all the quantities that occur in a problem or calculation. ( 'dij-əd-əl 'fɔr-mət )

**digital frequency meter** [ELECTR] A frequency meter in which the value of the frequency being measured is indicated on a digital display. ( 'dij-əd-əl 'frē-kwən-sē ,mēd-ər )

**digital incremental plotter** [COMPUT SCI] A device for converting digital signals in the output of a computer into graphical form, in which the digital signals control the motion of a plotting pen and of a drum that carries the paper on which the graph is drawn. ( 'dij-əd-əl ,ɪŋ-krə,ment-əl 'plād-ər )

**digital integrator** [COMPUT SCI] A device for computing definite integrals in which increments in the input variables and output variable are represented by digital signals. ( 'dij-əd-əl 'ɪn-tə ,grād-ər )

**digital intercontinental conversion equipment** [ELECTR] Equipment which uses pulse-code modulation to convert a 525-line, 60-frame-per-second television signal used in the United

## digital loop carrier

States into a 625-line, 50-frame-per-second phase-alternation line signal used in Europe; the 525-line signal is sampled and quantized into a pulse-code modulation signal which is stored in shift registers from which the phase-alternation line signal is read out. Abbreviated DICE. { 'dij-əd-əl ,in-tər,känt-ən'ent-əl kən'vər-zhən i,kwip-mənt }

**digital loop carrier** [COMMUN] A technology for providing 24 or more telephone circuits on many fewer pairs of wires, in which analog input signals are first sampled and digitized, and the binary digital signals from each user is then time-multiplexed into a single bit stream. { 'dij-əd-əl 'lūp ,kar-ē-ər }

**digital message entry system** [ELECTR] A system that encodes formatted messages in digital form; it enters the encoded digital information into a voice communications transceiver by frequency shift techniques. { 'dij-əd-əl 'mes-ij 'en-trē ,sis-təm }

**digital microwave radio** [COMMUN] Transmission of voice and data signals in digital form on microwave links, as in the 2-gigahertz common-carrier bands; pulse-code modulation is used. { 'dij-əd-əl 'mī-krō,wāv 'rād-ē-ō }

**digital modulation** [COMMUN] A method of placing digital traffic on a microwave system without use of modems, by transmitting the information in the form of discrete phase or frequency states determined by the digital signal. { 'dij-əd-əl ,mäj-ə'lä-shən }

**digital monitor** [ELECTR] A display unit that accepts digital signals and converts them to analog signals internally in order to illuminate the screen. { 'dij-əd-əl 'män-əd-ər }

**Digital Multiplexed Interface** [COMPUT SCI] A cost-effective, high-speed interconnection between terminals and host computers in a private branch exchange environment. { 'dij-əd-əl 'möl-tə,plekst 'in-tər,fäs }

**digital multiplier** [ELECTR] A multiplier that accepts two numbers in digital form and gives their product in the same digital form, usually by making repeated additions; the multiplying process is simpler if the numbers are in binary form wherein digits are represented by a 0 or 1. { 'dij-əd-əl 'möl-tə,plī-ər }

**digital object identifier** [COMPUT SCI] A system for identifying and exchanging intellectual properties (including, for example, physical objects as well as digital files) in the digital environment. { 'dij-əd-əl 'äb,jekt 'den-tä,fi-ər }

**digital output** [ELECTR] An output signal consisting of a sequence of discrete quantities coded in an appropriate manner for driving a printer or digital display. { 'dij-əd-əl 'aüt,püt }

**digital phase shifter** [ELECTR] Device which provides a signal phase shift by the application of a control pulse; a reversal or phase shift requires a control pulse of opposite polarity. { 'dij-əd-əl 'fäz ,shif-tər }

**digital plotter** [ELECTR] A recorder that produces permanent hard copy in the form of a graph from digital input data. { 'dij-əd-əl 'pläd-ər }

**digital printer** [COMPUT SCI] A printer that provides a permanent readable record of binary-coded decimal or other coded data in a digital form that may include some or all alphanumeric characters and special symbols along with numerals. Also known as digital recorder. { 'dij-əd-əl 'print-ər }

**digital private automatic branch exchange** [COMMUN] A central communications switching system for a local-area network, which employs existing telephone wires in a building for the connection of telephones and computer terminals and systems. { 'dij-əd-əl 'prīv-ət 'öd-əl,mäd-ik 'branch iks,chänj }

**digital radio** [COMMUN] The microwave transmission of digital signals through space or the atmosphere. { 'dij-əd-əl 'rād-ē-ō }

**digital recorder** See digital printer. { 'dij-əd-əl ri'körd-ər }

**digital recording** [ELECTR] Magnetic recording in which the information is first coded in a digital form, generally with a binary code that uses two discrete values of residual flux. { 'dij-əd-əl ri'körd-ij }

**digital representation** [COMPUT SCI] The use of discrete impulses or quantities arranged in coded patterns to represent variables or other data in the form of numbers or characters. { 'dij-əd-əl ,rep-rəzen'tä-shən }

**digital resolution** [COMPUT SCI] The ability of a digital computer to approach a truly correct answer, generally established by the number of places expressed, and the value of the least significant digit in a digitally coded representation. { 'dij-əd-əl ,rez-ə'lū-shən }

**digital set-top box** [COMMUN] A device that is attached to a television receiver and can collect, store, and output digitally compressed television signals. { ,dij-əd-əl 'set,täp ,bäks }

**digital signal analyzer** [ELECTR] A signal analyzer in which one or more analog inputs are sampled at regular intervals, converted to digital form, and fed to a memory. { 'dij-əd-əl 'sig-nəl ,än-ə ,liz-ər }

**digital signal processing** See signal processing. { ,dij-əd-əl ,sig-nəl 'prä-säs-ij }

**digital signal processing chip** [COMPUT SCI] A digital device for executing algorithms for the transformation or extraction of information from signals originally in analog form, such as audio or images. Abbreviated DSP chip. Also known as digital signal processor. { ,dij-əd-əl ,sig-nəl 'prä-säs-ij ,chip }

**digital signal processor** See digital signal processing chip. { ,dij-əd-əl 'sig-nəl ,prä,səs-ər }

**digital signature** [COMMUN] A set of alphabetic or numeric characters used to authenticate a cryptographic message by ensuring that the sender cannot later disavow the message, the receiver cannot forge the message or signature, and the receiver can prove to others that the contents of the message are genuine and originated with the sender. { 'dij-əd-əl 'sig-nə-chər }

**digital simulation** [COMPUT SCI] The representation of a system in a form acceptable to a digital



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computer as opposed to an analog computer.  
{ 'dij-əd-əl, sim-yə'lā-shən }

**digital speech communications** [COMMUN] Transmission of voice in digitized or binary form via landline or radio. { 'dij-əd-əl 'spēch kə ,myūn-ə,kā-shənz }

**digital speech interpolation** [COMMUN] In digital speech communications, the use of periods of inactivity or constant signal level to increase the transmission efficiency by insertion of additional signals. Abbreviated DSI. { 'dij-əd-əl 'spēch ,in-tər-pə,lā-shən }

**digital subscriber line** [COMMUN] A system that provides subscribers with continuous, uninterrupted connections to the Internet over existing telephone lines, offering a choice of speeds ranging from 32 kilobits per second to more than 50 megabits per second. Abbreviated DSL. { 'dij-əd-əl səb'skrīb-ər ,līn }

**digital synchronometer** [ELECTR] A time comparator that provides a direct-reading digital display of time with high precision by making accurate comparisons between its own digital clock and high-accuracy time transmissions from radio station WWV or a loran C station. { 'dij-əd-əl ,sīŋ-krə'nām-əd-ər }

**digital system** [COMPUT SCI] Any of the levels of operation for a digital computer, including the wires and mechanical parts, the logical elements, and the functional units for reading, writing, storing, and manipulating information. { 'dij-əd-əl 'sīs-təm }

**digital telemetering** [COMPUT SCI] Conversion of a continuous electrical analog signal into a digital (number system) code prior to transmitting the signal to a receiver. { 'dij-əd-əl 'tel-ə'mēd-ər-īŋ }

**digital television** [COMMUN] Television in which picture information is encoded into digital signals on the transmitter, and decoded at the receiver. Abbreviated DTV. { 'dij-əd-əl 'tel-ə ,vīzh-ən }

**digital television converter** [ELECTR] A converter used to convert television programs from one system to another, such as for converting 525-line 60-field United States broadcasts to 625-line 50-field European PAL (phase-alternation line) or SECAM (sequential couleur à mémoire) standards; the video signal is digitized before conversion. { 'dij-əd-əl 'tel-ə,vīzh-ən kən'vərd-ər }

**digital-to-analog converter** [ELECTR] A converter in which digital input signals are changed to essentially proportional analog signals. Abbreviated DAC. { 'dij-əd-əl tū 'an-ə,lāg kən'vərd-ər }

**digital-to-synchro converter** [ELECTR] A converter that changes binary-coded decimal or other digital input data to a three-wire synchro output signal representing corresponding angular data. { 'dij-əd-əl tū 'sīŋ-krə kən'vərd-ər }

**digital transducer** [ELECTR] A transducer that measures physical quantities and transmits the information as coded digital signals rather than as continuously varying currents or voltages. { 'dij-əd-əl tranz'dū-sər }

**digital versatile disk** See DVD. { 'dij-əd-əl 'vər-səd-əl ,disk }

**digital video disk** See DVD. { 'dij-əd-əl 'vid-ē-ō ,disk }

**digital voltmeter** [ELECTR] A voltmeter in which the unknown voltage is compared with an internally generated analog voltage, the result being indicated in digital form rather than by a pointer moving over a meter scale. { 'dij-əd-əl 'völt ,mēd-ər }

**digital watermark** [COMPUT SCI] Invisible or inaudible data (a random pattern of bits or noise) permanently embedded in a graphic, video, or audio file for protecting copyright or authenticating data. { 'dij-əd-əl 'wöd-ər,mārk }

**digit-coded voice** [COMPUT SCI] A limited, spoken vocabulary, each word of which corresponds to a code and which, upon keyed inquiry, can be strung in meaningful sequence and can be outputted as audio response to the inquiry. { 'dij-ət ,kōd-əd 'vōis }

**digit compression** [COMPUT SCI] Any process which increases the number of digits stored at a given location. { 'dij-ət kəm'presh-ən }

**digit delay element** [ELECTR] A logic element that introduces a delay of one digit period in a series of signals or pulses. { 'dij-ət di'lā ,el-ə-mənt }

**digitize** [COMPUT SCI] To convert an analog measurement of a quantity into a numerical value. { 'dij-ə,tīz }

**digitizer** [COMPUT SCI] A large drawing table connected to a computer video display and equipped with a penlike or pucklike instrument whose motions are reproduced on the screen. Also known as digitizer tablet. { 'dij-ə,tīz-ər }

**digitizer tablet** See digitizer. { 'dij-ə,tīz-ər ,tab-lat }

**digit period** [ELECTR] The time interval between successive pulses, usually representing binary digits, in a computer or in pulse modulation, determined by the pulse-repetition frequency. Also known as digit time. { 'dij-ət ,pīr-ē-əd }

**digit plane** [COMPUT SCI] In a computer memory consisting of magnetic cores arranged in a three-dimensional array, a plane containing elements for a particular digit position in various words. { 'dij-ət ,plān }

**digit pulse** [ELECTR] An electrical pulse which induces a magnetizing force in a number of magnetic cores in a computer storage, all corresponding to a particular digit position in a number of different words. { 'dij-ət ,pəls }

**digit rearrangement** [COMPUT SCI] A method of hashing which consists of selecting and shifting digits of the original key. { 'dij-ət ,rē-ə'rānj-mənt }

**digit time** See digit period. { 'dij-ət ,tīm }

**digram encoding** [COMPUT SCI] A method of data compression that relies on the fact that there are unused characters in the alphabet and uses these characters to represent common pairs of characters. { 'dī,gram ɪn,kōd-ɪŋ }

**diheptal base** [ELECTR] A tube base having 14 pins or 14 possible pin positions; used chiefly on television cathode-ray tubes. { 'dīhept-əl 'bās }

## dimension

**dimension** [COMPUT SCI] A declarative statement that specifies the width and height of an array of data items. {də'men-chən}

**dimension declaration statement** [COMPUT SCI] A FORTRAN statement identifying arrays and specifying the number and bounds of the subscripts. {də'men-chən-əl dek-lə'rā-shən ,stāt-mənt}

**diminution** [COMPUT SCI] Limiting the negative effect of an attack on a computer system. {,dim-ə'nū-shən}

**DIMM** [COMPUT SCI] A small circuit board that holds semiconductor memory chips with two independent rows of input/output contacts. Derived from dual in-line memory module.

**dimmer** [ELEC] An electrical or electronic control for varying the intensity of a lamp or other light source. {'dim-ər}

**dina** [ELECTR] An airborne radar-jamming transmitter operating in the band from 92 to 210 megahertz with an output of 30 watts, radiating noise in one side band for spot or barrage jamming; the carrier and the other side band are suppressed. {'dī-nə}

**D-indicator** See D-display. {'dē ,in-də,kād-ər}

**diode** [ELECTR] 1. A two-electrode electron tube containing an anode and a cathode. 2. See semiconductor diode. {'dī,ōd}

**diode alternating-current switch** See trigger diode. {'dī,ōd ,ōl-tər,nād-īŋ ,kər-ənt ,swiçh}

**diode amplifier** [ELECTR] A microwave amplifier using an IMPATT, TRAPATT, or transferred-electron diode in a cavity, with a microwave circulator providing the input/output isolation required for amplification; center frequencies are in the gigahertz range, from about 1 to 100 gigahertz, and power outputs are up to 20 watts continuous-wave or more than 200 watts pulsed, depending on the diode used. {'dī,ōd ,am-plə ,fī-ər}

**diode bridge** [ELECTR] A series-parallel configuration of four diodes, whose output polarity remains unchanged whatever the input polarity. {'dī,ōd ,brīdʒ}

**diode-capacitor transistor logic** [ELECTR] A circuit that uses diodes, capacitors, and transistors to provide logic functions. {'dī,ōd kə'pəs-əd-ər tran'zīs-tər ,ləj-ik}

**diode characteristic** [ELECTR] The composite electrode characteristic of an electron tube when all electrodes except the cathode are connected together. {'dī,ōd ,kər-ik-tə'rīs-tik}

**diode clamp** See diode clamping circuit. {'dī,ōd ,klamp}

**diode clamping circuit** [ELECTR] A clamping circuit in which a diode provides a very low resistance whenever the potential at a certain point rises above a certain value in some circuits or falls below a certain value in others. Also known as diode clamp. {'dī,ōd 'klamp-īŋ ,sər-kət}

**diode clipping circuit** [ELECTR] A clipping circuit in which a diode is used as a switch to perform the clipping action. {'dī,ōd 'klīp-īŋ ,sər-kət}

**diode-connected transistor** [ELECTR] A bipolar transistor in which two terminals are shorted to give diode action. {'dī,ōd kə'nek-təd tran'zīs-tər}

**diode demodulator** [ELECTR] A demodulator using one or more diodes to provide a rectified output whose average value is proportional to the original modulation. Also known as diode detector. {'dī,ōd də'mäj-ə,lād-ər}

**diode detector** See diode demodulator. {'dī,ōd dī'tek-tər}

**diode drop** See diode forward voltage. {'dī,ōd ,drəp}

**diode forward voltage** [ELECTR] The voltage across a semiconductor diode that is carrying current in the forward direction; it is usually approximately constant over the range of currents commonly used. Also known as diode drop; diode voltage; forward voltage drop. {'dī,ōd ,fōr-wərd 'vōl-tīdʒ}

**diode function generator** [ELECTR] A function generator that uses the transfer characteristics of resistive networks containing biased diodes; the desired function is approximated by linear segments. {'dī,ōd 'feŋk-shən ,jen-ə,rād-ər}

**diode gate** [ELECTR] An AND gate that uses diodes as switching elements. {'dī,ōd ,gāt}

**diode laser** See semiconductor laser. {'dī,ōd ,lāz-ər}

**diode limiter** [ELECTR] A peak-limiting circuit employing a diode that becomes conductive when signal peaks exceed a predetermined value. {'dī,ōd 'līm-əd-ər}

**diode logic** [ELECTR] An electronic circuit using current-steering diodes, such that the relations between input and output voltages correspond to AND or OR logic functions. {'dī,ōd ,ləj-ik}

**diode matrix** [ELECTR] A two-dimensional array of diodes used for a variety of purposes such as decoding and read-only memory. {'dī,ōd ,mā-triks}

**diode mixer** [ELECTR] A mixer that uses a crystal or electron tube diode; it is generally small enough to fit directly into a radio-frequency transmission line. {'dī,ōd ,mik-sər}

**diode modulator** [ELECTR] A modulator using one or more diodes to combine a modulating signal with a carrier signal; used chiefly for low-level signaling because of inherently poor efficiency. {'dī,ōd 'mäj-ə,lād-ər}

**diode pack** [ELECTR] Combination of two or more diodes integrated into one solid block. {'dī,ōd ,pak}

**diode peak detector** [ELECTR] Diode used in a circuit to indicate when peaks exceed a predetermined value. {'dī,ōd 'pēk dī,tek-tər}

**diode-pentode** [ELECTR] Vacuum tube having a diode and a pentode in the same envelope. {'dī ,ōd ,pen,tōd}

**diode rectifier** [ELECTR] A half-wave rectifier of two elements between which current flows in only one direction. {'dī,ōd 'rek-tə,fī-ər}

**diode rectifier-amplifier meter** [ELECTR] The most widely used vacuum tube voltmeter for measurement of alternating-current voltage.

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**diode switch** [ELECTR] Diode which is made to act as a switch by the successive application of positive and negative biasing voltages to the anode (relative to the cathode), thereby allowing or preventing, respectively, the passage of other applied waveforms within certain limits of voltage. { 'dī,ōd ,swich }

**diode theory** [ELEC] The theory that in a semicon- ductor, when the barrier thickness is comparable to or smaller than the mean free path of the carriers, then the carriers cross the barrier without being scattered, much as in a vacuum tube diode. { 'dī,ōd ,thē-ə-rē }

**diode transistor logic** [ELECTR] A circuit that uses diodes, transistors, and resistors to pro- vide logic functions. Abbreviated DTL. { dī,ōd tran'ziz-tər ,lāj-ik }

**diode-triode** [ELECTR] Vacuum tube having a diode and a triode in the same envelope. { dī ,ōd 'trī,ōd }

**diode voltage** See diode forward voltage. { 'dī ,ōd ,vōl-tij }

**diode voltage regulator** [ELECTR] A voltage regu- lator with a Zener diode, making use of its almost constant voltage over a range of currents. Also known as Zener diode voltage regulator. { dī ,ōd 'vōl-tij ,reg-yə,lād-ər }

**DIP** See dual in-line package. { dip }

**diphase generator** [ELEC] A generator that pro- duces two alternating currents in quadrature. { 'dī,fāz 'jen-ə,rād-ər }

**diplexer** [ELECTR] A coupling system that allows two different transmitters to operate simultane- ously or separately from the same antenna. { 'dī ,plek-sər }

**diplex operation** [COMMUN] Simultaneous trans- mission or reception of two signals using a specified common element, such as a single antenna or a single carrier. { 'dī,pleks ,əp-ə,rā- shən }

**diplex radio transmission** [COMMUN] The simul- taneous transmission of two signals by using a common carrier wave. { dī,pleks 'rād-ē-ō tranz ,mish-ən }

**diplex reception** [ELEC] Simultaneous reception of two signals which have some features in common, such as a single receiving antenna or a single carrier frequency. { 'dī,pleks rī'sep- shən }

**dipole antenna** [ELECTROMAG] An antenna ap- proximately one-half wavelength long, split at its electrical center for connection to a transmission line whose radiation pattern has a maximum at right angles to the antenna. Also known as doublet antenna; half-wave dipole. { 'dī,pōl an'ten-ə }

**dipole disk feed** [ELECTROMAG] Antenna, consist- ing of a dipole near a disk, used to reflect energy to the disk. { 'dī,pōl 'disk ,fēd }

**dipole moment** See electric dipole moment. { 'dī ,pōl ,mō-mənt }

**dipole polarization** See orientation polarization. { 'dī,pōl ,pō-lə-rə'zā-shən }

**dipole relaxation** [ELEC] The process, occupying a certain period of time after a change in the applied electric field, in which the orientation polarization of a substance reaches equilibrium. { 'dī,pōl ,rē,lak'sā-shən }

**DIP switch** [COMPUT SCI] A unit with several small rocker-type switches that plugs into a dual in-line package (DIP) on a printed circuit board. { 'dip ,swich }

**dipulse** [COMMUN] Transmission of a binary code in which the presence of one cycle of a sine-wave tone represents a binary "1" and the absence of one cycle represents a binary "0." { 'dī,pəls }

**direct access** See random access. { də'rekt 'ak- ses }

**direct-access library** [COMPUT SCI] A disk-stored set of programs, each of which is directly accessi- ble without sequential search. { də'rekt 'ak-ses 'lī,brer-ē }

**direct-access memory** See random-access mem- ory. { də'rekt 'ak-ses 'mem-rē }

**direct-access method** [COMPUT SCI] A technique for directly determining the location of data on a disk (track and sector address) from an identifying key in the record. { də'rekt 'ak-ses ,meth-əd }

**direct-access storage** See random-access mem- ory. { də'rekt 'ak-ses 'stōr-ij }

**direct-access storage device** [COMPUT SCI] Any peripheral storage device, such as a disk or drum, that can be directly addressed by a computer. Abbreviated DASD. { də'rekt 'ak-ses 'stōr-ij dī ,vīs }

**direct-acting recorder** [ENG] A recorder in which the marking device is mechanically connected to or directly operated by the primary detector. { də'rekt 'akt-ij rī'kōrd-ər }

**direct address** [COMPUT SCI] Any address speci- fying the location of an operand. { də'rekt 'a ,dres }

**direct-address processing** [COMPUT SCI] Any computer operation during which data are accessed by means of addresses rather than contents. { də'rekt 'a,dres 'präs,es-ij }

**direct allocation** [COMPUT SCI] A system in which the storage locations and peripheral units to be assigned to use by a computer program are specified when the program is written, in con- trast to dynamic allocation. { də'rekt ,al-ə,kā- shən }

**direct-aperture antenna** [ELECTROMAG] An an- tenna whose conductor or dielectric is a surface or solid, such as a horn, mirror, or lens. { də'rekt 'əp-ə-čər an'ten-ə }

**direct audio radio service** [COMMUN] Radio broadcasting from satellites directly to receivers on the ground. Abbreviated DARS. { də'rekt 'ōd-ē-ō 'rād-ē-ō ,sər-vəs }

**direct broadcasting satellite system** [COMMUN] A television broadcasting system in which program signals are transmitted from ground stations to satellite repeater stations in geo- stationary orbit, and from there directly to

home consumer terminals. Abbreviated DBS. { dɔː'rekt 'brɔːd,kɑːst-ɪŋ 'sɑːd-əl,ɪt 'sɪs-təm }

**direct broadcast radio satellite** [COMMUN] A satellite in geosynchronous orbit that broadcasts radio programming directly to inexpensive home, car-mounted, and portable radio receivers. { dɪ 'rekt 'brɔːd,kɑːst 'ræd-ē-ō ,sɑːd-əl,ɪt }

**direct code** [COMPUT SCI] A code in which instructions are written in the basic machine language. { dɔː'rekt 'kɔd }

**direct connect modem** [COMMUN] A device that transforms binary signals into electronic pulses (as opposed to sound modulations) that can be carried over a communications channel. { dɔː'rekt kə'nekt 'mɔːdem }

**direct control** [COMPUT SCI] The control of one machine in a data-processing system by another, without human intervention. { dɔː'rekt kən'trɔl }

**direct control function** See regulatory control function. { dɔː'rekt kən'trɔl ,fʌŋk-shən }

**direct-coupled amplifier** [ELECTR] A direct-current amplifier in which a resistor or a direct connection provides the coupling between stages, so small changes in direct currents can be amplified. { dɔː'rekt 'kəp-əld 'am-plə,fɪ-ər }

**direct-coupled FET logic** [ELECTR] A logic gate configuration used with gallium arsenide field-effect transistors operating in the enhancement mode, whose low power consumption and circuit simplicity lead to high packing density and potential use in very large-scale integrated circuits. Abbreviated DCFL. { dɔː'rekt 'kəp-əld 'ef,ɛ'tē 'læj-ɪk }

**direct-coupled transistor logic** [ELECTR] Integrated-circuit logic using only resistors and transistors, with direct conductive coupling between the transistors; speed can be up to 1 megahertz. Abbreviated DCTL. { dɔː'rekt 'kəp-əld træn'zɪs-tɔr 'læj-ɪk }

**direct coupling** [ELEC] Coupling of two circuits by means of a non-frequency-sensitive device, such as a wire, resistor, or battery, so both direct and alternating current can flow through the coupling path. { dɔː'rekt 'kəp-lɪŋ }

**direct current** [ELEC] Electric current which flows in one direction only, as opposed to alternating current. Abbreviated dc. { dɔː'rekt 'kə-rənt }

**direct-current amplifier** [ELECTR] An amplifier that is capable of amplifying dc voltages and slowly varying voltages. { dɔː'rekt 'kə-rənt 'am-plə,fɪ-ər }

**direct-current circuit** [ELEC] Any combination of dc voltage or current sources, such as generators and batteries, in conjunction with transmission lines, resistors, and power converters such as motors. { dɔː'rekt 'kə-rənt 'sər-kət }

**direct-current circuit theory** [ELEC] An analysis of relationships within a dc circuit. { dɔː'rekt 'kə-rənt 'sər-kət ,thē-ə-rē }

**direct-current component** [COMMUN] The average value of a signal; in television, it represents the average luminance of the picture being transmitted, in radar, the level from which the transmitted and received pulses rise. { dɔː'rekt 'kə-rənt kəm'pɔːnənt }

**direct-current continuity** [ELEC] Property of a circuit in which there is an established pathway for conduction of current from a direct-current source. { dɔː'rekt 'kə-rənt ,kænt-ən'juː-əd-ē }

**direct-current coupling** [ELECTR] That type of coupling in which the zero-frequency term of the Fourier series representing the input signal is transmitted. { dɔː'rekt 'kə-rənt 'kəp-lɪŋ }

**direct-current discharge** [ELECTR] The passage of a direct current through a gas. { dɔː'rekt 'kə-rənt 'dɪs,ʧɑːrʃ }

**direct-current dump** [ELECTR] Removal of all direct-current power from a computer system or component intentionally, accidentally, or conditionally; in some types of storage, this results in loss of stored information. { dɔː'rekt 'kə-rənt 'dʌmp }

**direct-current erase** [ELECTR] Use of direct current to energize an erasing head of a tape recorder. { dɔː'rekt 'kə-rənt ə'rās }

**direct-current generator** [ELEC] A rotating electric machine that converts mechanical power into dc power. { dɔː'rekt 'kə-rənt 'jɛn-ə,ræd-ər }

**direct-current inserter** [ELECTR] An analog television transmitter stage that adds to the video signal a dc component known as the pedestal level. { dɔː'rekt 'kə-rənt ɪn'sɔːd-ər }

**direct-current motor** [ELEC] An electric rotating machine energized by direct current and used to convert electric energy to mechanical energy. { dɔː'rekt 'kə-rənt 'mɔːd-ər }

**direct-current motor control** See electronic motor control. { dɔː'rekt 'kə-rənt 'mɔːd-ər kən'trɔl }

**direct-current offset** [ELECTR] A direct-current level that may be added to the input signal of an amplifier or other circuit. { dɔː'rekt 'kə-rənt 'ɔf,ɪt }

**direct-current picture transmission** [COMMUN] Television transmission in which the signal contains a dc component that represents the average illumination of the entire scene. Also known as direct-current transmission. { dɔː'rekt 'kə-rənt 'pɪk-ʧər træn'zɪs-mɪʃ-ən }

**direct-current plate resistance** [ELECTR] Value or characteristic used in vacuum-tube computations; it is equal to the direct-current plate voltage divided by the direct-current plate current. { dɔː'rekt 'kə-rənt 'plæt rɪ,zɪs-təns }

**direct-current power** [ELEC] The power delivered by a dc power system, equal to the line voltage times the load current. { dɔː'rekt 'kə-rənt 'paʊ-ər }

**direct-current power supply** [ELEC] A power supply that provides one or more dc output voltages, such as a dc generator, rectifier-type power supply, converter, or dynamotor. { dɔː'rekt 'kə-rənt 'paʊ-ər sʌ,plɪ }

**direct-current quadruplex system** [COMMUN] Direct-current telegraph system which affords simultaneous transmission of two messages in each direction over the same line, achieved by superimposing neutral telegraph upon polar telegraph. { dɔː'rekt 'kə-rənt 'kwɔːdrə,pleks ,sɪs-təm }

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**direct-current receiver** [ELECTR] A radio receiver designed to operate directly from a 115-volt dc power line. { dǎ'rekt |kǎ-rant rǐ'sěv-ǎr }

**direct-current reinsertion** See clamping. { dǎ'rekt |kǎ-rant rě-in'sǎr-shǎn }

**direct-current restoration** See clamping. { dǎ'rekt |kǎ-rant res-tǎ'rǎ-shǎn }

**direct-current restorer** [ELECTR] A clamp circuit used to establish a dc reference level in a signal without modifying to any important degree the waveform of the signal itself. Also known as clamping restorer. { dǎ'rekt |kǎ-rant rǐ'stǎr-ǎr }

**direct-current signaling** [ELEC] A transmission method that uses direct current. { dǎ'rekt |kǎ-rant 'sig-nǎl-ǐg }

**direct-current SQUID** [ELECTR] A type of superconducting quantum interference device (SQUID) which contains two Josephson junctions in a superconducting loop; its state is determined from direct-current measurements. { dǎ'rekt |kǎ-rant 'skwid }

**direct-current tachometer** [ELEC] A dc generator operating with negligible load current and with constant field flux provided by a permanent magnet, so its dc output voltage is proportional to speed. { dǎ'rekt |kǎ-rant tǎ'kǎm-ǎd-ǎr }

**direct-current telegraphy** [COMMUN] Telegraphy in which direct current controlled by the transmitting apparatus is supplied to the line to form the transmitted signal. { dǎ'rekt |kǎ-rant tǎ'leg-rǎ-fě }

**direct-current transducer** [ELECTR] A transducer that requires dc excitation and provides a dc output that varies with the parameter being sensed. { dǎ'rekt |kǎ-rant tranz'düs-ǎr }

**direct-current transmission** See direct-current picture transmission. { dǎ'rekt |kǎ-rant tranz'mish-ǎn }

**direct-current vacuum-tube voltmeter** [ELECTR] The amplifying and indicating portions of the diode rectifier-amplifier meter, which are usually designed so that the diode rectifier can be disconnected for dc measurements. { dǎ'rekt |kǎ-rant 'vak-yǎm |tüb 'vǎlt,měd-ǎr }

**direct-current voltage** See direct voltage. { dǎ'rekt |kǎ-rant 'vǎlt-tǐ }

**direct-current working volts** [ELEC] The maximum continuously applied dc voltage for which a capacitor is rated. Abbreviated dcwV. { dǎ'rekt |kǎ-rant 'wǎrk-ǐg ,vǎlts }

**direct digital control** [CONT SYS] The use of a digital computer generally on a time-sharing or multiplexing basis, for process control in petroleum, chemical, and other industries. { dǎ'rekt |dǐj-ǎd-ǎl kǎn'trǎl }

**direct distance dialing** [COMMUN] A telephone exchange service that allows a telephone user to dial subscribers outside the local area using a standard routing pattern from the local or end office. { dǎ'rekt |dis-tǎns 'dǐl-ǐg }

**direct-drive arm** [CONT SYS] A robot arm whose joints are directly coupled to high-torque motors. { dǎ'rekt |driv ,ǎrm }

**direct electromotive force** [ELEC] Unidirectional electromotive force in which the changes in

values are either zero or so small that they may be neglected. { dǎ'rekt |lek-trǎ'mǎd-ǐv 'fǎrs }

**direct-entry terminal** [COMPUT SCI] A device from which data are received into a computer immediately, and which edits data at the time of receipt, allowing computer files to be accessed to validate the information entered, and allowing the terminal operator to be notified immediately of any errors. { dǎ'rekt |en-trě 'term-ǎn-ǎl }

**direct expert control system** [CONT SYS] An expert control system that contains rules that directly associate controller output values with different values of the controller measurements and set points. Also known as rule-based control system. { dǎ'rekt ,eks-pǎrt kǎn'trǎl ,sis-tǎm }

**direct-feedback system** [CONT SYS] A system in which electrical feedback is used directly, as in a tachometer. { dǎ'rekt 'fěd,bǎk ,sis-tǎm }

**direct grid bias** See grid bias. { dǎ'rekt |grǐd ,bǐ-ǎs }

**direct hierarchy control** [COMPUT SCI] A method of manipulating data in a computer storage hierarchy in which data transfer is completely under the control of built-in algorithms and the user or programmer is not concerned with the various storage subsystems. { dǎ'rekt 'hǐ-ǎr ,ǎr-kě kǎn'trǎl }

**direct input/output** [COMPUT SCI] The transfer of data to and from a computer's main storage by passing it through the central processing unit. { dǎ'rekt 'in,püt 'ǎut,püt }

**direct-insert subroutine** [COMPUT SCI] A body of coding or a group of instructions inserted directly into the logic of a program, often in multiple copies, whenever required. { dǎ'rekt |in-sǎrt 'sǎb-rütěn }

**direct instruction** [COMPUT SCI] An instruction containing the address of the operand on which the operation specified in the instruction is to be performed. { dǎ'rekt in'strǎk-shǎn }

**direct interelectrode capacitance** See interelectrode capacitance. { dǎ'rekt |in-tǎr-ǐ'lek,trǎd kǎ'pas-ǎd-ǎns }

**direct inward dialing** [COMMUN] The capability for dialing individual telephone extensions in a large organization directly from outside, without going through a central switchboard. { dǎ'rekt |in-wǎrd 'dǐl-ǐg }

**directional antenna** [ELECTROMAG] An antenna that radiates or receives radio waves more effectively in some directions than others. { dǎ'rek-shǎn-ǎl ǎn'ten-ǎ }

**directional beam** [ELECTROMAG] A radio or radar wave that is concentrated in a given direction. { dǎ'rek-shǎn-ǎl 'běm }

**directional coupler** [ELECTR] A device that couples a secondary system only to a wave traveling in a particular direction in a primary transmission system, while completely ignoring a wave traveling in the opposite direction. Also known as directive feed. { dǎ'rek-shǎn-ǎl 'kǎp-lǎr }

**directional filter** [ELECTR] A low-pass, band-pass, or high-pass filter that separates the bands of frequencies used for transmission in opposite directions in a carrier system. Also known as

## directional gain

- directional separation filter. { dɑ'rek-shən-əl 'fil-tər }
- directional gain** See directivity index. { dɑ'rek-shən-əl 'gān }
- directional microphone** [ENG ACOUS] A microphone whose response varies significantly with the direction of sound incidence. { dɑ'rek-shən-əl 'mī-kro,fōn }
- directional pattern** See radiation pattern. { dɑ'rek-shən-əl 'pad-ərən }
- directional phase shifter** [ELEC] Passive phase shifter in which the phase change for transmission in one direction differs from that for transmission in the opposite direction. { dɑ'rek-shən-əl 'fāz,shif-tər }
- directional relay** [ELEC] Relay which functions in conformance with the direction of power, voltage, current, pulse, rotation, and so on. { dɑ'rek-shən-əl 'rē,lā }
- directional response pattern** See directivity pattern. { dɑ'rek-shən-əl rɪ'spɑ:ns ,pad-ərən }
- directional separation filter** See directional filter. { dɑ'rek-shən-əl sep-ə'rā-shən ,fil-tər }
- direction finder** See radio direction finder. { dɑ'rek-shən ,fīnd-ər }
- direction-independent radar** [ENG] Doppler radar used in sentry applications. { dɑ'rek-shən ,in-də 'pen-dənt 'rɑ,dɑ:r }
- direction rectifier** [ELECTR] A rectifier that supplies a direct-current voltage whose magnitude and polarity vary with the magnitude and relative polarity of an alternating-current synchro error voltage. { dɑ'rek-shən 'rek-tə,fī-ər }
- directive** [COMPUT SCI] An instruction in a source program that guides the compiler in making the translation to machine language, and is usually not translated into instructions in the object program. { dɑ'rek-tiv }
- directive feed** See directional coupler. { dɑ'rek-tiv ,fēd }
- directive gain** [ELECTROMAG] Of an antenna in a given direction,  $4\pi$  times the ratio of the radiation intensity in that direction to the total power radiated by the antenna. { dɑ'rek-tiv ,gān }
- directivity** [ELECTR] The ability of a logic circuit to ensure that the input signal is not affected by the output signal. [ELECTROMAG] **1.** The value of the directive gain of an antenna in the direction of its maximum value. **2.** The ratio of the power measured at the forward-wave sampling terminals of a directional coupler, with only a forward wave present in the transmission line, to the power measured at the same terminals when the direction of the forward wave in the line is reversed; the ratio is usually expressed in decibels. { dɑ'rek'tiv-əd-ē }
- directivity factor** [ENG ACOUS] **1.** The ratio of radiated sound intensity at a remote point on the principal axis of a loudspeaker or other transducer, to the average intensity of the sound transmitted through a sphere passing through the remote point and concentric with the transducer; the frequency must be stated. **2.** The ratio of the square of the voltage produced by sound waves arriving parallel to the principal

axis of a microphone or other receiving transducer, to the mean square of the voltage that would be produced if sound waves having the same frequency and mean-square pressure were arriving simultaneously from all directions with random phase; the frequency must be stated. { dɑ'rek'tiv-əd-ə ,fæk-tər }

**directivity index** [ENG ACOUS] The directivity factor expressed in decibels; it is 10 times the logarithm to the base 10 of the directivity factor. Also known as directional gain. { dɑ'rek'tiv-əd-ə ,in,deks }

**directivity pattern** [ENG ACOUS] A graphical or other description of the response of a transducer used for sound emission or reception as a function of the direction of the transmitted or incident sound waves in a specified plane and at a specified frequency. Also known as beam pattern; directional response pattern. { dɑ'rek'tiv-əd-ə ,pad-ərən }

**direct keying device** [COMPUT SCI] A computer input device which enables direct entry of information by means of a keyboard. { dɑ'rekt 'kē-ɪŋ di,vīs }

**directly heated cathode** See filament. { dɑ'rekt-lē 'hēd-əd 'kɑ,θəd }

**direct-map cache** [COMPUT SCI] A cache memory that is organized by linking it to locations in random-access memory. { dɑ'rekt ,mɑp 'kɑ:ʃ }

**direct memory access** [COMPUT SCI] The use of special hardware for direct transfer of data to or from memory to minimize the interruptions caused by program-controlled data transfers. Abbreviated dma. { dɑ'rekt 'mem-rē 'æk,sɛs }

**direct numerical control** [COMPUT SCI] The use of a computer to program, service, and log a process such as a machine-tool cutting operation. { dɑ'rekt nū'mer-i-kəl kən'trəl }

**director** [ELECTR] Telephone switch which translates the digits dialed into the directing digits actually used to switch the call. [ELECTROMAG] A parasitic element placed a fraction of a wavelength ahead of a dipole receiving antenna to increase the gain of the array in the direction of the major lobe. { dɑ'rek-tər }

**direct organization** [COMPUT SCI] A type of processing in which records within data sets stored on direct-access devices may be fetched directly if their physical locations are known. { dɑ'rekt ɔr-gə-nə'zā-shən }

**directory** [COMPUT SCI] The listing and description of all the fields of the records making up a file. { dɑ'rek-trē }

**directory service** [COMPUT SCI] **1.** A directory of the names and addresses of all the mail recipients on a particular network, which provides electronic mail addresses. **2.** A provider of online directories of Web sites and search engines. { dɑ'rek-trē ,sɔr-vəs }

**directory tree** [COMPUT SCI] A graphic representation of the hierarchical branching structure in which files are organized in a hard disk or other storage device. { dɑ'rek-trē ,trē }

**direct outward dialing** [COMMUN] A private automatic branch telephone exchange that permits

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all local stations to dial outside numbers. Abbreviated DOD. { dō'rekt 'jūt-wərd 'dīl-ij }

**direct piezoelectricity** [SOLID STATE] Name sometimes given to the piezoelectric effect in which an electric charge is developed on a crystal by the application of mechanical stress. { dē'rekt pē 'jā-zō, 'lɛk'trīs-əd-ē }

**direct point repeater** [ELECTR] Telegraph repeater in which the receiving relay controlled by the signals received over a line repeats corresponding signals directly into another line or lines without the interposition of any other repeating or transmitting apparatus. { dō'rekt 'pōint rī'pēd-ər }

**direct-power generator** [ENG] Any device which converts thermal or chemical energy into electric power by methods more direct than the conventional thermal cycle. { dō'rekt 'paū-ər 'jēn-ə 'rād-ər }

**direct-radiator speaker** [ENG ACOUS] A loud-speaker in which the radiating element acts directly on the air, without a horn. { dō'rekt 'rād-ə, 'ād-ər, 'spēk-ər }

**direct read after write** [COMPUT SCI] The reading of data immediately after the data have been written in order to check for errors in the recoding process. Abbreviated DRAW. { dō'rekt 'rēd, 'af-tər 'rīt }

**direct realization** [ELECTR] An active filter configuration that is derived by systematically replacing the elements of a passive RLC prototype filter (a filter that consists entirely of resistors, inductors, and capacitors) according to some rule. { dī 'rɛkt, 'rē-ə-lə'zā-shən }

**direct resistance-coupled amplifier** [ELECTR] Amplifier in which the collector, drain, or plate of one stage is connected either directly or through a resistor to the base, gate, or control grid of the next stage; used to amplify small changes in direct current. { dō'rekt rī'zīs-təns, 'kəp-əld 'əm-plə,fi-ər }

**direct route** [ELEC] In wire communications, the trunks that connect a pair of switching centers, regardless of the geographical direction the actual trunk facilities may follow. { dō'rekt 'rūt }

**direct sequence system** [COMMUN] A system for generating spread spectrum transmissions by phase-modulating a sine wave pseudorandomly by an unending string of pseudonoise code symbols, each of duration much smaller than a bit. { dō'rekt 'sē-kwəns, 'sīs-təm }

**direct stroke** [ELEC] A lightning stroke that actually strikes some part of a power or communication system. { dō'rekt 'strök }

**direct symbol recognition** [COMPUT SCI] Recognition by sensing the unique geometrical properties of symbols. { dō'rekt 'sīm-bəl, 'rɛk-ig, 'nīsh-ən }

**direct-view storage tube** [ELECTR] A cathode-ray tube in which secondary emission of electrons from a storage grid is used to provide an intensely bright display for long and controllable periods of time. Also known as display storage tube; viewing storage tube. { dō'rekt 'vyü 'stōr-ij, 'tüb }

**direct voltage** [ELEC] A voltage that forces electrons to move through a circuit in the same direction continuously, thereby producing a direct current. Also known as direct-current voltage. { dō'rekt 'vōl-tij }

**direct wave** [COMMUN] A radio wave that is propagated directly through space from transmitter to receiver without being refracted by the ionosphere. { dō'rekt 'wāv }

**direct-wire circuit** [ELEC] Supervised protective signaling circuit usually consisting of one metallic conductor and a ground return and having signal-receiving equipment responsive to either an increase or a decrease in current. { dō'rekt 'wīr 'sər-kət }

**direct-writing galvanometer** [ENG] A direct-writing recorder in which the stylus or pen is attached to a moving coil positioned in the field of the permanent magnet of a galvanometer. { dō'rekt 'wrid-ij, 'gal-və'nām-əd-ər }

**direct-writing recorder** [ENG] A recorder in which the permanent record of varying electrical quantities or signals is made on paper, directly by a pen attached to the moving coil of a galvanometer or indirectly by a pen moved by some form of motor under control of the galvanometer. Also known as mechanical oscillograph. { dō'rekt 'wrid-ij rī'kōrd-ər }

**disability glare** See glare. { dis-ə'bīl-əd-ē, 'glār }

**disable** [COMPUT SCI] 1. To prevent some action from being carried out. 2. To turn off a computer system or a piece of equipment. { dis-ə'bəl }

**disappearing filament pyrometer** See optical-pyrometer. { 'dis-ə,pir-ij, 'fil-ə-mənt pī'rām-əd-ər }

**disassemble** [COMPUT SCI] To translate a program from machine language to assembly language to aid in its understanding. { ,dis-ə 'sem-bəl }

**disassembler** [COMPUT SCI] A program that translates machine language into assembly language. { ,dis-ə 'sem-blər }

**disaster dump** [COMPUT SCI] A listing of the contents of a computer's central processing unit that is created when the computer detects an error that it cannot handle in the course of processing. { dī'zās-tər, 'damp }

**disc** See disk. { disk }

**discharge** [ELEC] To remove a charge from a battery, capacitor, or other electric-energy storage device. [ELECTR] The passage of electricity through a gas, usually accompanied by a glow, arc, spark, or corona. Also known as electric discharge. { 'dis, 'chärj }

**discharge key** [ELEC] Device for switching a capacitor suddenly from a charging circuit to a load through which it can discharge. { 'dis, 'chärj, 'kē }

**discharge lamp** [ELECTR] A lamp in which light is produced by an electric discharge between electrodes in a gas (or vapor) at low or high pressure. Also known as electric-discharge lamp; gas-discharge lamp; vapor lamp. { 'dis, 'chärj, 'lamp }

**discharger** [ELEC] A silver-impregnated cotton wick encased in a flexible plastic tube with an

## discharge tube

aluminum mounting lug, used on aircraft to reduce precipitation static. { 'dis, chärj-ər }

**discharge tube** [ELECTR] An evacuated enclosure containing a gas at low pressure, through which current can flow when sufficient voltage is applied between metal electrodes in the tube. Also known as electric-discharge tube. { 'dis, chärj, tüb }

**discomfort glare** See glare. { dis'kəm-fört ,glər }

**discone antenna** [ELECTROMAG] A biconical antenna in which one of the cones is spread out to 180° to form a disk; the center conductor of the coaxial line terminates at the center of the disk, and the cable shield terminates at the vertex of the cone. { 'dis, kōn an'ten-ə }

**disconnect** [ELEC] To open a circuit by removing wires or connections, as distinguished from opening a switch to stop current flow. [ENG] To sever a connection. { ,dis-kə'nekt }

**disconnect fitting** [ELEC] An electrical connection that can be disconnected without tools. { ,dis-kə'nekt ,fid-ŷig }

**disconnecting switch** [ELEC] A switch that isolates a circuit or piece of electrical apparatus after interruption of the current. Also known as disconnect. { ,dis-kə'nek-tŷig ,swiçh }

**disconnecter** See disconnecting switch. { ,dis-kə'nek-tər }

**disconnecter release** [ELEC] Device which disengages the apparatus used in a telephone connection to restore it to its original condition when not in use. { ,dis-kə'nek-tər ri'lēs }

**discontinuous amplifier** [ELECTR] Amplifier in which the input waveform is reproduced on some type of averaging basis. { ,dis-kən'tin-yə-was 'am-plä, fī-ər }

**discrete address beacon system** See Mode S. { di,skrēt 'ad-res 'bē-kən ,sis-təm }

**discrete comparator** See digital comparator. { di'skrēt kəm'par-əd-ər }

**discrete cosine transform** [COMMUN] A mathematical transform, used in bit rate reduction applications, in which the reconstructed bit stream is identical to the bit stream input to the system; in this regard, the transform is a mathematical process that can be perfectly undone. Abbreviated DCT. { di'skrēt 'kō,sin 'tranz,förm }

**discrete sampling** [ELECTR] Sampling in which the individual samples are of such long duration that the frequency response of the channel is not deteriorated by the sampling process. { di'skrēt 'säm-plŷig }

**discrete sound system** [ENG ACOUS] A quadraphonic sound system in which the four input channels are preserved as four discrete channels during recording and playback processes; sometimes referred to as a 4-4-4 system. { di'skrēt 'saund ,sis-təm }

**discrete system** [CONT SYS] A control system in which signals at one or more points may change only at discrete values of time. Also known as discrete-time system. { di'skrēt 'sis-təm }

**discrete-time system** See discrete system. { di'skrēt ,tīm 'sis-təm }

**discrete transfer function** See pulsed transfer function. { di'skrēt 'tranz-för ,fəŋk-shən }

**discrete-word intelligibility** [COMMUN] The percent of intelligibility obtained when the speech units under consideration are words, usually presented so as to minimize the contextual relation between them. { di'skrēt ,wörd in ,tel-ə-jə'bŷil-əd-ē }

**discrimination** [COMMUN] **1.** In frequency-modulated systems, the detection or demodulation of the imposed variations in the frequency of the carriers. **2.** In a tuned circuit, the degree of rejection of unwanted signals. **3.** Of any system or transducer, the difference between the losses at specified frequencies with the system or transducer terminated in specified impedances. [COMPUT SCI] See conditional jump. { di'skrim-ə'nā-shən }

**discriminator** [ELECTR] A circuit in which magnitude and polarity of the output voltage depend on how an input signal differs from a standard or from another signal. { di'skrim-ə,nād-ər }

**discriminator transformer** [ELECTR] A transformer designed to be used in a stage where frequency-modulated signals are converted directly to audio-frequency signals or in a stage where frequency changes are converted to corresponding voltage changes. { di'skrim-ə ,nād-ər tranz'förm-ər }

**disengage** [ENG] To break the contact between two objects. { ,dis-ə'n'gāj }

**dish** See parabolic reflector. { ,diʃ }

**disintegration voltage** [ELECTR] The lowest anode voltage at which destructive positive-ion bombardment of the cathode occurs in a hot-cathode gas tube. { di's, in-tə'grā-shən ,völ-tij }

**disjunctive search** [COMPUT SCI] A search to find items that have at least one of a given set of characteristics. { di'sjŋk-tiv 'sərch }

**disk** [COMPUT SCI] A rotating circular plate having a surface on which information may be stored as a pattern of magnetically polarized spots (on a magnetic disk) or holes (on an optical disk) on concentric recording tracks. Also known as magnetic disk. Also spelled disc. { ,disk }

**disk armature** [ELEC] The armature in a motor that has a disk winding or is made up of a metal disk. { 'disk ,är-ma-çör }

**disk cache** [COMPUT SCI] A portion of random-access memory that contains the data most recently read from or written to the disk, allowing rapid access by the central-processing unit. { 'disk ,kæʃ }

**disk capacitor** [ELEC] A small, flat, circular capacitor that usually has a ceramic dielectric. { 'disk kə,pas-əd-ər }

**disk cartridge** [COMPUT SCI] A removable module that contains a single magnetic disk platter which remains attached to the housing when placed into the disk drive. { 'disk ,kär-triçj }

**disk crash** See head crash. { 'disk ,kræʃ }

**disk drive** [COMPUT SCI] The physical unit that holds, spins, reads, and writes the magnetic disks. Also known as disk unit. { 'disk ,dri:v }



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**disk drive controller** [COMPUT SCI] A device that enables a microcomputer to control the functioning of a disk drive. { 'disk ,driv kən'trō-lər }

**diskette** See floppy disk. { d'isket }

**disk file** [COMPUT SCI] An organized collection of records held on a magnetic disk. { 'disk ,fil }

**diskless work station** [COMPUT SCI] A computer in a network that has no disk storage of its own. { 'disk-ləs 'wɜrk ,stā-shən }

**disk memory** See disk storage. { 'disk ,mem-rē }

**disk operating system** [COMPUT SCI] An operating system which uses magnetic disks as its primary on-line storage. Abbreviated DOS. { 'disk 'ɔp-ə-rād-ɪŋ ,sis-təm }

**disk pack** [COMPUT SCI] A set of magnetic disks that can be removed from a disk drive as a unit. { 'disk ,pæk }

**disk recording** [ENG ACOUS] 1. The process of inscribing suitably transformed acoustical or electrical signals on a phonograph record. 2. See phonograph record. { 'disk rɪ'kɔrd-ɪŋ }

**disk-seal tube** [ELECTR] An electron tube having disk-shaped electrodes arranged in closely spaced parallel layers, to give low interelectrode capacitance along with high power output, up to 2500 megahertz. Also known as lighthouse tube; megatron. { 'disk ,sēl ,tju:b }

**disk storage** [ELECTR] An external computer storage device consisting of one or more disks spaced on a common shaft, and magnetic heads mounted on arms that reach between the disks to read and record information on them. Also known as disk memory; magnetic disk storage. { 'disk 'stɔr-ɪd }

**disk striping** [COMPUT SCI] The distribution of a unit of data over two or more hard disks, enabling the data to be read more quickly. Also known as data striping. { 'disk ,stri:p-ɪŋ }

**disk thermistor** [ELECTR] A thermistor which is produced by pressing and sintering an oxide binder mixture into a disk, 0.2–0.6 inch (5–15 millimeters) in diameter and 0.04–0.5 inch (1.0–13 millimeters) thick, coating the major surfaces with conducting material, and attaching leads. { 'disk θɜr'mis-tɔr }

**disk unit** See disk drive. { 'disk ,yü-nət }

**dispatching** [COMPUT SCI] The control of priorities in a queue of requests in a multiprogramming or multitasking environment. { dis'pach-ɪŋ }

**dispatching priority** [COMPUT SCI] In a multiprogramming or multitasking environment, the priority assigned to an active (non-real time, nonforeground) task. { dis'pach-ɪŋ pri,'är-əd-ē }

**dispenser cathode** [ELECTR] An electron tube cathode having provisions for continuously replacing evaporated electron-emitting material. { dɪ'spen-sər ,kath,əd }

**disperse** [COMPUT SCI] A data-processing operation in which grouped input items are distributed among a larger number of groups in the output. { dɪ'spɜrs }

**dispersion** [COMMUN] The entropy of the output of a communications channel when the input is known. [ELECTROMAG] Scattering of microwave radiation by an obstruction. { dɪ'spɜr-zhən }

**displacement** [COMPUT SCI] The number of character positions or memory locations from some point of reference to a specified character or data item. Also known as offset. [ELEC] See electric displacement. { dis'plās-mənt }

**displacement angle** [ELEC] The change in the phase of an alternator's terminal voltage when a load is applied. { dis'plās-mənt ,æŋ-gəl }

**display** [ELECTR] 1. A visible representation of information, in words, numbers, or drawings, as on the cathode-ray tube screen of a radar set, navigation system, or computer console. 2. The device on which the information is projected. Also known as display device. 3. The image of the information. { di'splā }

**display adapter** See video display board. { di'splā ə,dap-tər }

**display console** [COMPUT SCI] A cathode-ray tube or other display unit on which data being processed or stored in a computer can be presented in graphical or character form; sometimes equipped with a light pen with which the user can alter the information displayed. { di'splā ,kən ,sɔl }

**display control** [COMPUT SCI] A unit in a computer system consisting of channels and associated control circuitry that connect a number of visual display units with a central processor. { di'splā kən'trɔl }

**display cycle** [COMPUT SCI] In computer graphics, the sequence of operations carried out to display an image. { di,splā ,sɪ-kəl }

**display device** See display. { di'splā di,vīs }

**display element** [COMPUT SCI] In computer graphics, a basic component of a display, such as a circle, line, or dot. { di'splā ,el-ə-mənt }

**display entity** [COMPUT SCI] In computer graphics, a group of display elements that can be manipulated as a unit. { di'splā ,en-təd-ē }

**display formats** See radar display formats. { di ,splā ,fɔr-matz }

**display frame** [COMPUT SCI] In computer graphics, one of a sequence of frames making up a computer-generated animation. { di'splā ,frām }

**display information processor** [COMPUT SCI] Computer used to generate situation displays in a combat operations center. { di'splā in-fər 'mā-shən ,præs-es-ər }

**display list** [COMPUT SCI] In computer graphics, a set of vectors that form an image stored in vectors graphics format. { di'splā ,list }

**display packing** [COMPUT SCI] An efficient means of transmitting the x and y coordinates of a point packed in a single word to halve the time required to refresh the spot on a cathode-ray tube display. { di'splā ,pak-ɪŋ }

**display power management signaling** [COMPUT SCI] Signaling whereby a video adapter can instruct a monitor to reduce its power level to conserve electricity. Abbreviated DPMS. { di 'splā 'paü-ər ,man-ɪj-mənt ,sig-nəl-ɪŋ }

**display primary** [COMMUN] One of the primary colors produced in a video system that, when mixed in proper proportions, serve to produce the other desired colors. { di'splā 'prɪ,mer-ē }

## display processor

**display processor** [COMPUT SCI] A section of a computer which handles the routines required to display an output on a cathode-ray tube. {di'splā ,prās,es-ər }  
**display screen** See video monitor. {di'splā ,skrēn }  
**display storage tube** See direct-view storage tube. {di'splā 'stōr-ij ,tüb }  
**display system** [COMPUT SCI] The total system, combining hardware and software, needed to achieve a visible representation of information in a data-processing system. {di'splā ,sis-təm }  
**display terminal** [COMPUT SCI] A computer output device in which characters and sometimes graphic information appear on the screen of a cathode-ray tube; now largely replaced by monitors using bit-mapped displays. Also known as display unit; video display terminal (VDT). {di'splā ,tər-mən-əl }  
**display tube** [ELECTR] A cathode-ray tube used to provide a visual display. Also known as visual display unit. {di'splā ,tüb }  
**display unit** See display terminal. {di'splā ,yü-nät }  
**display window** [COMMUN] Width of the portion of the frequency spectrum presented on panoramic presentation, expressed in frequency units, usually megahertz. {di'splā ,win,dō }  
**disposition** [COMPUT SCI] The status of a file after it has been closed by a computer program, for example, retained or deleted. {,dis-pə'zish-ən }  
**disruptive discharge** [ELEC] A sudden and large increase in current through an insulating medium due to complete failure of the medium under electrostatic stress. {dis'rəp-tiv 'dis,çhärj }  
**dissector tube** [ELECTR] Camera tube having a continuous photo cathode on which is formed a photoelectric emission pattern which is scanned by moving its electron-optical image over an aperture. {dä'sek-tər ,tüb }  
**dissipation factor** [ELEC] The inverse of Q, the storage factor. {,dis-ə'pā-shən ,fak-tər }  
**dissipation line** [ELECTROMAG] A length of stainless steel or Nichrome wire used as a noninductive terminating impedance for a rhombic transmitting antenna when several kilowatts of power must be dissipated. {,dis-ə'pā-shən ,līn }  
**dissipation loss** [ELEC] A measure of the power loss of a transducer in transmitting signals, expressed as the ratio of its input power to its output power. {,dis-ə'pā-shən ,lōs }  
**dissymmetrical network** See dissymmetrical transducer. {,dis-ə'me-trə-kəl 'net,work }  
**dissymmetrical transducer** [ELECTR] A transducer whose input and output image impedances are not equal. Also known as dissymmetrical network. {,dis-ə'me-trə-kəl tranz'dü-sər }  
**distance mark** [ELECTR] A movable point produced on a radar display by a special signal generator, so that when the mark is moved to a target position on the screen the range to the target can be read on the calibrated dial of the signal generator; usually used for gun laying where highly accurate distance is important. {'dis-təns ,märk }

**distance marker** [ENG] One of a series of concentric circles, painted or otherwise fixed on the screen of a plan position indicator, from which the distance of a target from the radar antenna can be read directly; used for surveillance and navigation where the relative distances between a number of targets are required simultaneously. Also known as radar range marker; range marker. {'dis-təns ,märk-ər }  
**distance protection** [ELEC] Effect of a device operative within a predetermined electrical distance on the protected circuit to cause and maintain an interruption of power in a faulty circuit. {'dis-təns prə'tek-shən }  
**distance reception** [COMMUN] Reception of messages from, or communication with, distant radio stations: Abbreviated DX. {'dis-təns ri'sep-shən }  
**distance relay** [ELEC] Protective relay, the operation of which is a function of the distance between the relay and the point of fault. {'dis-təns ,rē-lā }  
**distance resolution** [ENG] The minimum radial distance by which targets must be separated to be separately distinguishable by a particular radar. Also known as range discrimination; range resolution. {'dis-təns ,rez-ə,lü-shən }  
**distance/velocity lag** [CONT SYS] The delay caused by the amount of time required to transport material or propagate a signal or condition from one point to another. Also known as transportation lag; transport lag. {'dis-təns və'lās-əd-ē ,lag }  
**distant field** [ELECTROMAG] The electromagnetic field at a distance of five wavelengths or more from a transmitter, where the radial electric field becomes negligible. {'dis-tənt 'fēld }  
**distortion** [ELECTR] Any undesired change in the waveform of an electric signal passing through a circuit or other transmission medium. [ENG] In general, the extent to which a system fails to accurately reproduce the characteristics of an input signal at its output. [ENG ACOUS] Any undesired change in the waveform of a sound wave. {di'stōr-shən }  
**distortion factor** [COMMUN] Ratio of the effective value of the residue of a wave after elimination of the fundamental to the effective value of the original wave. {di'stōr-shən ,fak-tər }  
**distortion meter** [ENG] An instrument that provides a visual indication of the harmonic content of an audio-frequency wave. {di'stōr-shən ,mēd-ər }  
**distress frequency** [COMMUN] A frequency allotted to distress calls, generally by international agreement; for ships at sea and aircraft over the sea, it is 500 kilohertz. {də'stres ,frē'kwəns-ē }  
**distributed amplifier** [ELECTR] A wide-band amplifier in which tubes are distributed along artificial delay lines made up of coils acting with the input and output capacitances of the tubes. {di'strib-yəd-əd 'am-plā,fī-ər }  
**distributed bulletin board** [COMPUT SCI] A collection of newsgroups on a wide-area network.

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[di'strib-yəd-əd 'būl-ət-ən ,bɔrd]

**distributed capacitance** [ELEC] Capacitance that exists between the turns in a coil or choke, or between adjacent conductors or circuits, as distinguished from the capacitance concentrated in a capacitor. [di'strib-yəd-əd kə'pəs-əd-əns]

**distributed circuit** [ELECTR] A film circuit whose effective components cannot be easily recognized as discrete. [di'strib-yəd-əd 'sər-kət]

**distributed communications** [COMMUN] Information transfer beyond the local level that may involve the originating source to transmit information to all communications centers on any one network, and may also cause an interchange of communications among several whole networks. [di'strib-yəd-əd kə'myū-nə'kə-shənz]

**distributed computing** [COMPUT SCI] The use of multiple network-connected computers for solving a problem or for information processing. [di'strib-yəd-əd kəm'pyüd-ɪŋ]

**distributed control system** [CONT SYS] A collection of modules, each with its own specific function, interconnected tightly to carry out an integrated data acquisition and control application. [di'strib-yəd-əd kən'trɔl ,sɪs-təm]

**distributed database** [COMPUT SCI] A database maintained in physically separated locations and supported by a computer network so that it is possible to access all parts of the database from various points in the network. [di'strib-yəd-əd 'dæd-ə ,bæs]

**distributed-emission photodiode** [ELECTR] A broad-band photodiode proposed for detection of modulated laser beams at millimeter wavelengths; incident light falls on a photocathode strip that generates a traveling wave of photocurrent having the same wave velocity as the transmission line which the photodiode feeds. [di'strib-yəd-əd ə'mɪʃ-ən ,fōd-ō,dī,əd]

**distributed free space** [COMPUT SCI] Empty spaces in a data layout to allow new data to be inserted at a future time. [di'strib-yəd-əd 'frɛ 'spæs]

**distributed intelligence** [COMPUT SCI] The existence of processing capability in terminals and other peripheral devices of a computer system. Also known as distributed logic. [di'strib-yəd-əd ɪn'tel-ə-ʃəns]

**distributed logic** See distributed intelligence. [di'strib-yəd-əd 'ləj-ɪk]

**distributed logic cluster word processor** [COMPUT SCI] A system of word processors each of which can operate independently, although printers are generally shared by a number of terminals. [di'strib-yəd-əd 'ləj-ɪk,kləs-tər 'wɔrd ,præs-es-ər]

**distributed network** [COMMUN] A communications network in which there exist alternative routings between the various nodes. [COMPUT SCI] A computer network in which at least some of the processing is done at individual work stations and information is shared by and often

stored at the work stations. [di'strib-yəd-əd 'net,wɜrk]

**distributed numerical control** [CONT SYS] The use of central computers to distribute part-classification data to machine tools which themselves are controlled by computers or numerical control tapes. [di'strib-yəd-əd nū'mer-ə-kəl kən'trɔl]

**distributed-parameter system** See distributed system. [di'strib-yəd-əd pə'ræm-əd-ər ,sɪs-təm]

**distributed paramp** [ELECTR] Paramagnetic amplifier that consists essentially of a transmission line shunted by uniformly spaced, identical varactors; the applied pumping wave excites the varactors in sequence to give the desired traveling-wave effect. [di'strib-yəd-əd 'pær 'æmp]

**distributed processing system** [COMPUT SCI] An information processing system consisting of two or more programmable devices, connected so that information can be exchanged. [di'strib-yəd-əd 'præs-es-ɪŋ ,sɪs-təm]

**distributed system** [COMPUT SCI] A computer system consisting of a collection of autonomous computers linked by a network and equipped with software that enables the computers to coordinate their activities and to share the resources of system hardware, software, and data, so that users perceive a single, integrated computing facility. [CONT SYS] A collection of modules, each with its own specific function, interconnected to carry out integrated data acquisition and control in a critical environment. [SYS ENG] A system whose behavior is governed by partial differential equations, and not merely ordinary differential equations. Also known as distributed-parameter system. [di'strib-yəd-əd 'sɪs-təm]

**distributing frame** [ELECTR] Structure for terminating permanent wires of a central office, private branch exchange, or private exchange, and for permitting the easy change of connections between them by means of cross-connecting wires. [di'strib-yəd-ɪŋ ,fræm]

**distributing terminal assembly** [ELECTR] Frame situated between each pair of selector bays to provide terminal facilities for the selector bank wiring and facilities for cross-connection to trunks running to succeeding switches. [di'strib-yəd-ɪŋ 'tɜrm-ən-əl ə ,sem-blē]

**distribution amplifier** [ELECTR] A radio-frequency power amplifier used to feed television or radio signals to a number of receivers, as in an apartment house or a hotel. [ENG ACOUS] An audio-frequency power amplifier used to feed a speech or music distribution system and having sufficiently low output impedance so changes in load do not appreciably affect the output voltage. [di's-trə'byū-shən 'æm-plə,fī-ər]

**distribution cable** [ELEC] Cable extending from a feeder cable into a specific area for the purpose of providing service to that area. [di's-trə'byū-shən ,kæ-bəl]

**distribution center** [ELEC] In an alternating-current power system, the point at which

## distribution control

control and routing equipment is installed. { ,dis-trə'byū-shən ,sen-tər }

**distribution control** See linearity control. { ,dis-trə'byū-shən kən'trōl }

**distribution frame** [COMMUN] A place where a number of cables converge and signals are redistributed among them. { ,dis-trə'byū-shən ,frām }

**distribution substation** [ELEC] An electric power substation associated with the distribution system and the primary feeders for supply to residential, commercial, and industrial loads. { ,dis-trə'byū-shən 'səb,stā-shən }

**distribution switchboard** [ELEC] Power switchboard used for the distribution of electrical energy at the voltage common for each distribution within a building. { ,dis-trə'byū-shən 'swich ,bōrd }

**distribution system** [ELEC] Circuitry involving high-voltage switchgear, step-down transformers, voltage dividers, and related equipment used to receive high-voltage electricity from a primary source and redistribute it at lower voltages. Also known as electric distribution system. { ,dis-trə'byū-shən ,sis-təm }

**distribution transformer** [ELEC] An element of an electric distribution system located near consumers which changes primary distribution voltage to secondary distribution voltage. { ,dis-trə'byū-shən tranz'fōr-mər }

**distributor** [ELEC] 1. Any device which allocates a telegraph line to each of a number of channels, or to each row of holes on a punched tape, in succession. 2. A rotary switch that directs the high-voltage ignition current in the proper firing sequence to the various cylinders of an internal combustion engine. [ELECTR] The electronic circuitry which acts as an intermediate link between the accumulator and drum storage. { də'strib-yəd-ər }

**distributor points** [ELEC] Cam-operated contacts, the opening of which triggers the ignition pulse in an internal combustion engine. { də'strib-yəd-ər ,pōins }

**disturbance** [COMMUN] An undesired interference or noise signal affecting radio, television, or data reception. { də'stɔr-bəns }

**disturbed-one output** [ELECTR] One output of a magnetic cell to which partial-read pulses have been applied since that cell was last selected for writing. { də'stɔrbd |wɔn 'aʊt,pʊt }

**dither** [COMMUN] A technique for representing the entire gray scale of a picture by picture elements with only one of two levels ("white" and "black"), in which a multilevel input image signal is compared with a position-dependent set of thresholds, and picture elements are

set to "white" only where the image input signal exceeds the threshold. [CONT SVS] A force having a controlled amplitude and frequency, applied continuously to a device driven by a servomotor so that the device is constantly in small-amplitude motion and cannot stick at its null position. Also known as buzz. { 'dɪθ-ər }

**dither matrix** [COMMUN] A square matrix of threshold values that is repeated as a regular array to provide a threshold pattern for an entire image in the dither method of image representation. { 'dɪθ-ər ,mā-triks }

**divergence** [ELECTR] The spreading of a cathode-ray stream due to repulsion of like charges (electrons). { də'vɔr-ʃəns }

**diversity** [COMMUN] Method of signal extraction by which an optimum resultant signal is derived from a combination of, or selection from, a plurality of transmission paths, channels, techniques, or physical arrangements; the system may employ space diversity, polarization diversity, frequency diversity, or any other arrangement by which a choice can be made between signals. { də'vɔr-səd-ē }

**diversity factor** [ELEC] Ratio of the sum of the individual maximum demands to total maximum demand, as applied to an electrical distribution system. { də'vɔr-səd-ē ,fak-tər }

**diversity gain** [COMMUN] Gain in reception as a result of the use of two or more receiving antennas. { də'vɔr-səd-ē ,gān }

**diversity radar** [ENG] A radar that uses two or more transmitters and receivers, each pair operating at a slightly different frequency but sharing a common antenna and video display, to obtain greater effective range and reduce susceptibility to jamming. { də'vɔr-səd-ē 'rā,dār }

**diversity receiver** [ELECTR] A radio receiver designed for space or frequency diversity reception. { də'vɔr-səd-ē rɪ'se-vər }

**diversity reception** [COMMUN] Radio reception in which the effects of fading are minimized by combining two or more sources of signal energy carrying the same modulation. { də'vɔr-səd-ē rɪ'sep-shən }

**diverter** [ELEC] A low resistance which is connected in parallel with the series or commutating pole winding of a direct-current machine and diverts current from it, causing the magnetomotive force produced by the winding to vary. { də'vɔrd-ər }

**diverter-pole generator** [ELEC] Compound wound direct-current generator with the series winding of the diverter pole opposing the flux generated by the shunt wound main pole; provides a close voltage regulation. { də'vɔrd-ər ,pōl 'jen-ə ,rād-ər }

**divide check** [COMPUT SCI] An error signal indicating that an illegal division (such as dividing by zero) was attempted. { də'vɪd ,çek }

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**divided slit scan** [COMPUT SCI] In optical character recognition, a device consisting of a narrow column of photoelectric cells which scans an input character at given intervals for the purpose of obtaining its horizontal and vertical components. { dā'vid-əd 'slit ,skan }

**dividing network** See crossover network. { dā'vid-ŋ ,net ,wɔrk }

**division** [COMPUT SCI] One of four required parts of a COBOL program, labeled identification, environment, data, and procedure, each with a set of rules governing the contents. { dā'vizh-ən }

**division subroutine** [COMPUT SCI] A built-in program which achieves division by methods such as repetitive subtraction. { dā'vizh-ən 'səb-rū,tēn }

**dma** See direct memory access.

**DNS** See domain name system.

**Dobrowolsky generator** [ELEC] Three-wire, direct-current generator with a balance coil connected across the armature; the coil's midpoint produces the midpoint voltage for the system. { ,dō-brə'vāl-skē 'jen-ə,rād-ər }

**docking station** [COMPUT SCI] A device that connects a portable computer with peripherals such as an external monitor, keyboard, and so on, allowing a portable computer to function as a desktop computer. { 'dāk-ŋ ,stā-shən }

**document** [COMPUT SCI] 1. Any record, printed or otherwise, that can be read by a human or a machine. 2. To prepare a written text and charts describing the purpose, nature, usage, and operation of a program or a system of programs. { 'dāk-yə-mənt }

**document alignment** [COMPUT SCI] The phase of the reading process in which a transverse force is applied to a document to line up its reference edge with that of the reading station. { 'dāk-yə-mənt ə,līn-mənt }

**documentation** [COMPUT SCI] The collection, organized and stored, of records that describe the purpose, use, structure, details, and operational requirements of a program, for the purpose of making this information easily accessible to the user. { ,dāk-yə-mən'tā-shən }

**document comparison utility** [COMPUT SCI] A program that compares two documents created by word-processing programs and provides a display of the differences between them. { ,dāk-yə-mənt kəm'par-ə-sən yū,tīl-əd-ē }

**document flow** [COMPUT SCI] The path taken by documents as they are processed through a record handling system. { 'dāk-yə-mənt ,flō }

**document handling** [COMPUT SCI] In character recognition, the process of loading, feeding, transporting, and unloading a cut-form document that has been submitted for character recognition. { 'dāk-yə-mənt ,hand-ŋŋ }

**document image processing** [COMPUT SCI] The scanning of paper documents followed by the storage, retrieval, display, and management of the resulting electronic images. Also known as document imaging. { ,dāk-yə-mənt 'im-ŋŋ ,prā ,ses-ŋŋ }

**document imaging** See document image processing. { 'dāk-yə-mənt ,im-ŋŋ-ŋŋ }

**document leading edge** [COMPUT SCI] In character recognition, that edge which is the foremost one encountered during the reading process and whose relative position defines the document's direction of travel. { 'dāk-yə-mənt ,lēd-ŋŋ 'eŋ }

**document misregistration** [COMPUT SCI] In character recognition, the improper state of appearance of a document, on site in a character reader, with respect to real or imaginary horizontal baselines. { 'dāk-yə-mənt ,mis-rej-ə'strā-shən }

**document number** [COMPUT SCI] The number given to a document by its originators to be used as a means for retrieval; it will follow any one of various systems, such as chronological, subject area, or accession. { 'dāk-yə-mənt ,nəm-bər }

**document processing** [COMPUT SCI] The creation, handling, labeling, and modification of text documents, such as in word processing and in the indexing of documents for retrieval based on their content. { ,dāk-yə-mənt 'prā ,ses-ŋŋ }

**document reader** [COMPUT SCI] An optical character reader which reads a limited amount of information (one to five lines) and generally operates from a predetermined format. { 'dāk-yə-mənt ,rēd-ər }

**document reference edge** [COMPUT SCI] In character recognition, that edge of a source document which provides the basis of all subsequent reading processes, insofar as it indicates the relative position of registration marks, and the impending text. { 'dāk-yə-mənt 'ref-rəns ,eŋ }

**Document Type Definition** [COMPUT SCI] In Standard Generalized Markup Language, a file that specifies the tags in a particular document and the relationships among the fields that they represent. Abbreviated DTD. { 'dāk-yə-mənt ,tīp ,def-ə ,nīsh-ən }

**docu term** [COMPUT SCI] A word or phrase descriptive of the subject matter or concept of an item of information and considered important for later retrieval of information. { 'dāk-yə ,tɔrm }

**DOD** See direct outward dialing.

**dog** [COMPUT SCI] A name for the hexadecimal digit whose decimal equivalent is 13. { ,dɔg }

**doghouse** [ELECTR] Small enclosure placed at the base of a transmitting antenna tower to house antenna tuning equipment. { 'dɔg ,haʊs }

**Doherty amplifier** [ELECTR] A linear radio-frequency power amplifier that is divided into two sections whose inputs and outputs are connected by quarter-wave networks; for all values of input signal voltage up to one-half maximum amplitude, section no. 1 delivers all the power to the load; above this level, section no. 2 comes into operation. { 'dō-ərd-ē ,am-plā ,fī-ər }

**do loop** [COMPUT SCI] A FORTRAN iterative technique which enables any number of instructions to be executed repeatedly. { 'dū ,lūp }

**domain** [COMPUT SCI] 1. The set of all possible values contained in a particular field for every record of a file. 2. The protected resources that are surrounded by the security perimeter of a distributed computer system. Also known as

## domain name

enclave; protected subnetwork. **3.** The final two or three letters of an Internet address, which specifies the highest subdivision, in the United States this is the type of organization, such as commercial, educational, or governmental, while outside the United States it is usually a country. {dō'mān }

**domain name** [COMPUT SCI] An alphanumeric string which identifies a particular computer or a network on the Internet. {dō'mān ,nām }

**domain name system** [COMPUT SCI] Abbreviated DNS. **1.** A system used on the Internet to map the easily remembered names of host computers (domain names) to their respective Internet Protocol (IP) numbers. **2.** A software database program that converts domain names to Internet Protocol addresses, and vice versa. {dō,mān 'nām ,sis-təm }

**domain tip memory** [COMPUT SCI] A computer memory in which the presence or absence of a magnetic domain in a localized region of a thin magnetic film designates a 1 or 0. Abbreviated DOT memory. Also known as magnetic domain memory. {dō'mān ,tip 'mem-rē }

**domestic induction heater** [ENG] A cooking utensil heated by current (usually of commercial power line frequency) induced in it by a primary inductor. {də'mes-tik in'dak-shən ,hēd-ər }

**domestic public-frequency bands** [COMMUN] Radio-frequency bands reserved for public service within the United States. {də'mes-tik 'pab-lik 'frē-kwən-sē ,bānz }

**domestic satellite** [ENG] A satellite in stationary orbit 22,300 miles (35,680 kilometers) above the equator for handling 12 or more separate color television programs, thousands of private-line telephone calls, or an equivalent number of channels for other communication services within the United States. Abbreviated DOMSAT. {də'mes-tik 'səd-əl,īt }

**dominant mode** See fundamental mode. {'dām-ə-nənt 'mōd }

**DOMSAT** See domestic satellite. {'dām,sat }

**dongle** [COMPUT SCI] A hardware device that plugs into a computer or printer port and serves as a copy-protection device for certain software, which must verify its presence in order to run properly. Also known as hardware key. {'dāŋ-gəl }

**donor** [SOLID STATE] An impurity that is added to a pure semiconductor material to increase the number of free electrons. Also known as donor impurity; electron donor. {'dō-nər }

**donor impurity** See donor. {'dō-nər im,pjur-ədə }

**do-nothing instruction** See NO OP. {'dū ,nəth-ŋ in ,strək-shən }

**doorknob capacitor** [ELEC] A high-voltage, plastic-encased capacitor resembling a doorknob in size and shape. {'dōr ,nəb kə,pas-əd-ər }

**dopant** See doping agent. {'dō-pənt }

**dope** See doping agent. {'döp }

**doped junction** [ELECTR] A junction produced by adding an impurity to the melt during growing of a semiconductor crystal. {'dōpt 'jəŋk-shən }

**doping** [ELECTR] The addition of impurities to a semiconductor to achieve a desired charac-

teristic, as in producing an *n*-type or *p*-type material. Also known as semiconductor doping. {'döp-ŋ }

**doping agent** [ELECTR] An impurity element added to semiconductor materials used in crystal diodes and transistors. Also known as dopant; dope. {'döp-ŋ ,jə-ŋənt }

**doping compensation** [ELECTR] The addition of donor impurities to a *p*-type semiconductor or of acceptor impurities to an *n*-type semiconductor. {'döp-ŋ kəm-pən'sā-shən }

**Doppler filtering** [ELECTR] A form of coherent signal processing in a Doppler radar involving, in a pulsed radar, multiple pulses in a coherent processing interval so that one Doppler shift, indicative of the target radial velocity, may be distinguished from another; similar Doppler-sensitive processing in a continuous-wave radar. {'döp-lər ,fil-tər-ŋ }

**Doppler radar** [ENG] Coherent radar, either continuous wave or pulsed, capable of sensing the radial motion of targets by sensing the Doppler shift of the echoes. {'döp-lər 'rā,dār }

**Doppler sonar** [ENG] Sonar based on Doppler shift measurement technique. Abbreviated DS. {'döp-lər 'sō,nār }

**Doppler tracking** [ENG] Tracking of a target by using Doppler radar. {'döp-lər ,trak-ŋ }

**Doppler VOR** [NAV] A ground-based navigational aid operating at very high frequency and using a wide-aperture radiation system to reduce azimuth errors caused by reflection from terrain and other obstacles; makes use of the Doppler principle to solve the problem of ambiguity that arises from the use of a radiation system with apertures that exceed one-half wavelength. {'döp-lər 'vɔ:ɔ:ər }

**DOS** See disk operating system. {'däs }

**dot** See button. {'dät }

**dot-addressable** [COMPUT SCI] The ability of an electronic display or a dot-matrix printer to specify the individual dots that form images of characters. {'dät ə'dres-ə-bəl }

**dot character printer** See dot matrix printer. {'dät 'kar-ik-tər ,prɪnt-ər }

**dot cycle** [COMMUN] In teletypewriter systems, an on-off or mark-space cycle in which both mark and space have the same length as the unit pulse. {'dät ,si-kəl }

**dot generator** [ELECTR] A signal generator that produces a dot pattern on the screen of a color display device for use in convergence adjustments. {'dät ,jen-ə ,rād-ər }

**dot matrix** [COMPUT SCI] An array of dots that forms a character or graphic symbol. {'dät 'mā-triks }

**dot matrix printer** [COMPUT SCI] A type of printer that forms each character as a group of small dots, using a group of wires located in the printing element. Also known as dot character printer. {'dät 'mā-triks 'prɪnt-ər }

**dot-sequential color television** [ELECTR] An analog color television system in which the red, blue, and green primary-color dots are formed in rapid succession along each scanning line. {'dät sək-wen-chəl 'kəl-ər 'tel-ə ,vɪz-ən }

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**dot system** [ELECTR] Manufacturing technique for producing microelectronic circuitry. ( 'dät ,sis-təm )

**double-amplitude-modulation multiplier** [ELECTR] A multiplier in which one variable is amplitude-modulated by a carrier, and the modulated signal is again amplitude-modulated by the other variable; the resulting double-modulated signal is applied to a balanced demodulator to obtain the product of the two variables. ( 'dɒb-əl 'am-plə,tüd 'mäj-ə,lä-shən 'məl-tə,plɪ-ər )

**double armature** [ELEC] An armature with two separate windings on a single core. ( 'dɒb-əl 'är-mə-čar )

**double-barrier resonant tunneling diode** [ELECTR] A variant of the tunnel diode with thin layers of aluminum gallium arsenide and gallium arsenide that have sharp interfaces and have widths comparable to the Schrödinger wavelengths of the electrons, permitting resonant behavior. Abbreviated DBRT diode. ( 'dɒb-əl ,bar-ē-ər 'rez-ən-ənt ,tən-əl-ɪŋ 'dɪ,ɒd )

**double-base diode** See unijunction transistor. ( 'dɒb-əl 'bās 'dɪ,ɒd )

**double-base junction diode** See unijunction transistor. ( 'dɒb-əl 'bās 'jɒŋk-shən 'dɪ,ɒd )

**double-base junction transistor** [ELECTR] A tetrode transistor that is essentially a junction triode transistor having two base connections on opposite sides of the central region of the transistor. Also known as tetrode junction transistor. ( 'dɒb-əl 'bās 'jɒŋk-shən tran'zɪs-tər )

**double-beam cathode-ray tube** [ELECTR] A cathode-ray tube having two beams and capable of producing two independent traces that may overlap; the beams may be produced by splitting the beam of one gun or by using two guns. ( 'dɒb-əl 'bjēm 'kæθ,ɒd 'rā ,tüb )

**double-bounce calibration** [ELECTR] Method of radar calibration which is used to determine the zero set error by using round-trip echoes; the correct range is the difference between the first and second echoes. ( 'dɒb-əl 'baʊns kal-ə'brä-shən )

**double-break switch** [ELEC] Switch which opens the connected circuit at two points. ( 'dɒb-əl 'bräk 'swɪç )

**double bridge** See Kelvin bridge. ( 'dɒb-əl 'brɪdʒ )

**double-buffered data transfer** [COMPUT SCI] The transmission of data into the buffer register and from there into the device register proper. ( 'dɒb-əl 'bʌf-əd'dad-ə ,trans-fər )

**double bus-double breaker** [ELEC] A substation switching arrangement having two common buses and two breakers per connection. ( 'dɒb-əl 'bʌs 'dɒb-əl ,bräk-ər )

**double bus-single breaker** [ELEC] A substation switching arrangement that involves two common buses and only one breaker per connection. ( 'dɒb-əl 'bʌs 'sɪŋ-gəl ,bräk-ər )

**double-button microphone** [ENG ACOUS] A carbon microphone having two carbon-filled buttonlike containers, one on each side of the diaphragm, to give twice the resistance change obtainable with a single button. Also known as differential microphone. ( 'dɒb-əl 'bʌt-ən 'mɪ-kro,fōn )

**double-channel duplex** [COMMUN] A method that provides for simultaneous communication between two stations through use of two radio-frequency channels, one in each direction. ( 'dɒb-əl 'çan-əl 'dʌ,pleks )

**double-channel simplex** [COMMUN] A method that provides for nonsimultaneous communication between two stations through use of two radio-frequency channels, one in each direction. ( 'dɒb-əl 'çan-əl 'sɪm,pleks )

**double-click** [COMPUT SCI] To depress and release a mouse button twice in quick succession; often used to initiate an action such as opening a file, and to extend actions that result from a single click. ( 'dɒb-əl 'klɪk )

**double-current cable code** [COMMUN] A cable code in which characters are determined by bipolar characters of equal length. ( 'dɒb-əl 'kæ-rənt 'kæ-bəl ,kōd )

**double-current generator** [ELEC] Machine which supplies both direct and alternating current from the same armature winding. ( 'dɒb-əl 'kæ-rənt 'jen-ə,rād-ər )

**double-current signaling** [COMMUN] A system of telegraph signaling that uses both positive and negative currents. ( 'dɒb-əl 'kæ-rənt 'sɪŋ-nəl-ɪŋ )

**double data rate** [COMPUT SCI] A clocking technique that increases the transfer speeds of synchronous memories by using both the leading and trailing edges of the clock signal to transfer data, effectively doubling the transfer rate or bandwidth. ( 'dɒb-əl 'dad-ə ,ræt )

**double density** [COMPUT SCI] Property of a computer storage medium that holds twice as much data per unit of storage space as the standard; applied particularly to floppy disks. ( 'dɒb-əl 'den-səd-ē )

**double-diffused transistor** [ELECTR] A transistor in which two *pn* junctions are formed in the semiconductor wafer by gaseous diffusion of both *p*-type and *n*-type impurities; an intrinsic region can also be formed. ( 'dɒb-əl də'fjʊzd tran'zɪs-tər )

**double-diode limiter** [ELECTR] Type of limiter which is used to remove all positive signals from a combination of positive and negative pulses.

## double-doped transistor

or to remove all the negative signals from such a combination of positive and negative pulses. {dab-əl |dī,ōd 'līm-əd-ər }

**double-doped transistor** [ELECTR] The original grown-junction transistor, formed by successively adding *p*-type and *n*-type impurities to the melt during growing of the crystal. {dab-əl |dōpt tran'zīs-tər }

**double-doublet antenna** [ELECTROMAG] Two half-wave doublet antennas criss-crossed at their center, one being shorter than the other to give broader frequency coverage. {dab-əl |dab-lət an'ten-ə }

**double frequency shift keying** [COMMUN] Multiplex system in which two telegraph signals are combined and transmitted simultaneously by a method of frequency shifting between four radio frequencies. {dab-əl 'frē-kwən-sē |shift 'kē-īŋ }

**double image** [ELECTR] A television picture consisting of two overlapping images due to reception of the analog signal over two paths of different length so that signals arrive at slightly different times. {dab-əl 'līm-ij }

**double-length number** [COMPUT SCI] A number having twice as many digits as are ordinarily used in a given computer. Also known as double-precision number. {dab-əl |lɛŋkθ 'nəm-bər }

**double limiter** See cascade limiter. {dab-əl 'līm-əd-ər }

**double-list sorting** [COMPUT SCI] A method of internal sorting in which the entire unsorted list is first placed in one portion of main memory and sorting action then takes place, creating a sorted list, generally in another area of memory. {dab-əl |list 'sōrd-īŋ }

**double moding** [ELECTR] Undesirable shifting of a magnetron from one frequency to another at irregular intervals. {dab-əl 'mōd-īŋ }

**double modulation** [COMMUN] A method of modulation in which a subcarrier is first modulated with the desired intelligence, and the modulated subcarrier is then used to modulate a second carrier having a higher frequency. {dab-əl |māj-ə'lā-shən }

**double-polarity pulse-amplitude modulation** [COMMUN] Pulse-amplitude modulation employing pulses of positive and negative polarity, the average value being equal to zero. Also known as bidirectional pulse-amplitude modulation. {dab-əl pə'lār-əd-ē 'pəls |əm-plə |tūd |māj-ə'lā-shən }

**double-pole double-throw switch** [ELEC] A six-terminal switch or relay contact arrangement that simultaneously connects one pair of terminals to either of two other pairs of terminals. Abbreviated dpdt switch. {dab-əl |pōl |dab-əl |θrō 'swīç }

**double-pole single-throw switch** [ELEC] A four-terminal switch or relay contact arrangement that simultaneously opens or closes two separate circuits or both sides of the same circuit. Abbreviated dpst switch. {dab-əl |pōl |sīŋ-gōl |θrō 'swīç }

**double-pole switch** [ELEC] A switch that operates simultaneously in two separate electric

circuits or in both lines of a single circuit. {dab-əl |pōl 'swīç }

**double precision** [COMPUT SCI] The use of two computer words to represent a double-length number. {dab-əl prə'sīz-ən }

**double-precision hardware** [COMPUT SCI] Special arithmetic units in a computer designed to handle double-length numbers, employed in operations in which greater accuracy than normal is desired. {dab-əl prə'sīz-ən 'hārd,wēr }

**double-precision number** See double-length number. {dab-əl prə'sīz-ən 'nəm-bər }

**double-pulse recording** [COMPUT SCI] A technique for recording binary digits in magnetic cells in which each cell consists of two regions that can be magnetized in opposite directions and the value of each bit (0 or 1) is determined by the order in which the regions occur. {dab-əl |pəls rī'kōrd-īŋ }

**doubler** See frequency doubler. {dab-lər }

**double refraction** See birefringence. {dab-əl rī'frak-shən }

**double screen** [ELECTR] Three-layer cathode-ray tube screen consisting of a two-layer screen with the addition of a second long-persistence coating having a different color and different persistence from the first. {dab-əl 'skrēn }

**double-shield enclosure** [ELEC] Type of shielded enclosure or room in which the inner wall is partially isolated electrically from the outer wall. {dab-əl |shēld in'klō-zhər }

**double-sideband modulation** [COMMUN] Amplitude modulation in which the modulated wave is composed of a carrier, an upper sideband whose frequency is the sum of the carrier and modulation frequencies, and a lower sideband whose frequency is the difference between the carrier and modulation frequencies. Abbreviated DSB. Also known as double-sideband transmitted-carrier modulation (DSB-TC modulation; DSTC modulation). {dab-əl |sīd,band |māj-ə'lā-shən }

**double-sideband reduced-carrier modulation** [COMMUN] A form of amplitude modulation in which both the upper and lower sidebands are transmitted but the power contained in the unmodulated carrier is reduced to a fixed level below that provided to the modulator. Abbreviated DSB-RC modulation. {dab-əl |sīd |band rī,düst |kar-ē-ər |māj-ə'lā-shən }

**double-sideband suppressed-carrier modulation** [COMMUN] A form of amplitude modulation in which both the upper and lower sidebands are transmitted but the power contained in the unmodulated carrier is reduced to a fixed level below that provided to the modulator. Abbreviated DSB-SC modulation. {dab-əl |sīd |band sə,prest |kar-ē-ər |māj-ə'lā-shən }

**double-sideband transmission** [COMMUN] The transmission of a modulated carrier wave accompanied by both of the sidebands resulting from modulation; the upper sideband corresponds to the sum of the carrier and modulation frequencies, whereas the lower sideband corresponds to the difference between



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**double-sideband transmitted-carrier modulation** See double-sideband modulation. { }dab-ol }sid,band tranz'mid-ad ,kar-er ,maj-ol-la-shan }

**double-sided board** [ELECTR] A printed wiring board that contains circuitry on both external layers. { }dab-ol ,sid-ad 'bord }

**double-sided disk** [COMPUT SCI] A diskette that can be written on both of its sides. { }dab-ol }sid-ad 'disk }

**double-stream amplifier** [ELECTR] Microwave traveling-wave amplifier in which amplification occurs through interaction of two electron beams having different average velocities. { }dab-ol ,strom 'am-pla,fi-or }

**double-stub tuner** [ELECTROMAG] Impedance-matching device, consisting of two stubs, usually fixed three-eighths of a wavelength apart, in parallel with the main transmission lines. { }dab-ol ,stab 'tun-er }

**double-superheterodyne reception** [COMMUN] Method of reception in which two frequency converters are employed before final detection. Also known as triple detection. { }dab-ol ,su-per/het-ro,din ri'sep-shon }

**doublet antenna** See dipole antenna. { 'dab-lat an'ten-a }

**double-throw circuit breaker** [ELEC] Circuit breaker by means of which a change in the circuit connections can be obtained by closing either of two sets of contacts. { }dab-ol ,thro 'sar-kot ,brak-or }

**double-throw switch** [ELEC] A switch that connects one set of two or more terminals to either of two other similar sets of terminals. { }dab-ol ,thro 'swich }

**double-track tape recorder** [ENG ACOUS] A tape recorder with a recording head that covers half the tape width, so two parallel tracks can be recorded on one tape. Also known as dual-track tape recorder; half-track tape recorder. { }dab-ol ,trak 'tap ri,kord-or }

**double triode** [ELECTR] An electron tube having two triodes in the same envelope. Also known as duotriode. { }dab-ol 'tri,od }

**doublet trigger** [ELECTR] A trigger signal consisting of two pulses spaced a predetermined amount for coding purposes. { 'dab-lat ,trig-or }

**double-tuned amplifier** [ELECTR] Amplifier of one or more stages in which each stage uses coupled circuits having two frequencies of resonance, to obtain wider bands than those obtainable with single tuning. { }dab-ol ,tund 'am-pla,fi-or }

**double-tuned circuit** [ELECTR] A circuit that is resonant to two adjacent frequencies, so that there are two approximately equal values of peak response, with a dip between. { }dab-ol ,tund 'sar-kot }

**double-tuned detector** [ELECTR] A type of frequency-modulation discriminator in which the limiter output transformer has two secondaries, one tuned above the resting frequency and the other tuned an equal amount below. { }dab-ol ,tund di'tek-tar }

**double-winding synchronous generator** [ELEC] Synchronous generator which has two similar windings, in phase with one another, mounted on the same magnetic structure but not connected electrically, designed to supply power to two independent external circuits. { }dab-ol }wind-ig }sig-kro-nos 'jen-ol,rad-or }

**double word** [COMPUT SCI] A unit containing twice as many bits as a word. { }dab-ol 'word }

**double-word addressing** [COMPUT SCI] An addressing mode in computers with short words (less than 16 bits) in which the second of two consecutive instruction words contains the address of a location. { }dab-ol ,word 'a ,dres-ig }

**doubly linked ring** [COMPUT SCI] A cycle arrangement of data elements in which searches are possible in both directions. { }dab-ol }likt 'rig }

**do-until structure** [COMPUT SCI] A set of program statements that is executed once, and may then be executed repeatedly, depending on the results of a test specified in the first statement. { 'du an'til ,strak-chor }

**do-while structure** [COMPUT SCI] A set of program statements that is executed repeatedly, as long as some condition, specified in the first statement, remains in effect. { 'du 'wil ,strak-chor }

**down-lead** See lead-in. { 'daun ,led }

**downlink** [COMMUN] The radio or optical transmission path downward from a communications satellite to the earth or an aircraft, or from an aircraft to the earth. { 'daun ,liŋk }

**download** [COMPUT SCI] To transfer a program or data file from a central computer to a remote computer or to the memory of an intelligent terminal. { 'daun ,lod }

**downward compatibility** [COMPUT SCI] The ability of an older or smaller computer to accept programs from a newer or larger one. Also known as backward compatibility. { 'daun-word kam ,pad-ol'bil-ad-e }

**Dow oscillator** See electron-coupled oscillator. { 'daun 'as-ol,lad-or }

**DPCM** See differential pulse-code modulation.

**dpdt switch** See double-pole double-throw switch. { 'dɛpɛ,dɛ'tɛ ,swich }

**DPMS** See display power management signaling.

**dpst switch** See double-pole single-throw switch. { 'dɛpɛ'es'tɛ ,swich }

**drag** [COMPUT SCI] To move an object across a screen by moving a pointing device while holding down the control button. { drag }

**drag and drop** [COMPUT SCI] A feature whereby operations are performed on objects, such as icons or blocks of text, by dragging them across the screen to a particular spot. { 'drag an 'drap }

**drag-cup motor** [ELEC] An induction motor having a cup-shaped rotor or conducting material, inside of which is a stationary magnetic core. { 'drag ,kɒp 'mɒd-or }

**drain** [ELEC] See current drain. [ELECTR] The region into which majority carriers flow in a field-effect transistor; it is comparable to the collector of a bipolar transistor and the anode of an electron tube. { dræn }

## drain wire

**drain wire** [ELEC] Metallic conductor frequently used in contact with foil-type signal-cable shielding to provide a low-resistance ground return at any point along the shield. { 'drān ,wīr }

**DRAM** See dynamic random-access memory. { 'dē ,rām }

**DRAW** See direct read after write. { drō }

**drawing program** [COMPUT SCI] A graphics program that maintains images in vector graphics format, allowing the user to design and illustrate objects on the display screen. Also known as illustration program. { 'drō-ig ,prō-gram }

**dress** [ELECTR] The arrangement of connecting wires in a circuit to prevent undesirable coupling and feedback.

**drift** [ENG] A gradual deviation from a set adjustment, such as frequency or balance current, or from a direction. { drift }

**drift-corrected amplifier** [ELECTR] A type of amplifier that includes circuits designed to reduce gradual changes in output, used in analog computers. { 'drift kə'rek-təd 'am-plā ,fī-ər }

**drift error** [COMPUT SCI] An error arising in the use of an analog computer due to gradual changes in the output of circuits (such as amplifiers) in the computer. { 'drift ,er-ər }

**drift space** [ELECTR] A space in an electron tube which is substantially free of externally applied alternating fields and in which repositioning of electrons takes place. { 'drift ,spās }

**drift speed** [ELEC] Average speed at which electrons or ions progress through a medium. { 'drift ,spēd }

**drift transistor** [ELECTR] 1. A transistor having two plane parallel junctions, with a resistivity gradient in the base region between the junctions to improve the high-frequency response. 2. See diffused-alloy transistor. { 'drift tran ,zīs-tər }

**drill circuit** [COMMUN] A telegraph circuit used only to practice sending and receiving. { 'dril ,sar-kət }

**drill down** [COMPUT SCI] In data mining, viewing data at a greater level of detail, for example, viewing individual sales as opposed to viewing total sales. { 'dril 'daūn }

**drill up** [COMPUT SCI] In data mining, viewing data in less detail; for example, viewing total sales as opposed to individual sales. { 'dril 'əp }

**drive** [ELECTR] See excitation. [ENG] The means by which a machine is given motion or power or by which power is transferred from one part of a machine to another. { drīv }

**drive array** [COMPUT SCI] A collection of hard disks organized to increase speed and improve reliability, often with the help of data stripping. { 'drīv ə ,rā }

**drive bay** [COMPUT SCI] A space in the cabinet of a personal computer where disk drives, tape drives, and CD-ROM drives can be installed. Also known as bay. { 'drīv ,bā }

**drive control** See horizontal drive control. { 'drīv kən ,trōl }

**driveless work station** [COMPUT SCI] A computer or terminal in a local area network that does not

have its own disk drives and relies on a central mass storage facility for information storage. { 'driv-ləs 'wərk ,stā-shən }

**drive light** [COMPUT SCI] A lamp on the front of a disk drive that lights to indicate when the unit is reading or writing data. { 'drīv ,līt }

**driven array** [ELECTROMAG] An antenna array consisting of a number of driven elements, usually half-wave dipoles, fed in phase or out of phase from a common source. { 'driv-ən ə ,rā }

**driven blocking oscillator** See monostable blocking oscillator. { 'driv-ən 'blək-ig 'is-ə ,lād-ər }

**driven element** [ELECTROMAG] An antenna element that is directly connected to the transmission line. { 'driv-ən 'el-ə-mənt }

**drive pattern** [COMMUN] In a facsimile system, undesired pattern of density variations caused by periodic errors in the position of the recording spot. { 'drīv ,pad-ərn }

**drive pulse** [ELECTR] An electrical pulse which induces a magnetizing force in an element of a magnetic core storage, reversing the polarity of the core. { 'drīv ,pəls }

**driver** [COMPUT SCI] A sequence of program instructions that controls an input/output device such as a tape drive or disk drive. [ELECTR] The amplifier stage preceding the output stage in a receiver or transmitter. [ENG ACOUS] The portion of a horn loudspeaker that converts electrical energy into acoustical energy and feeds the acoustical energy to the small end of the horn. { 'drī-vər }

**driver element** [ELECTROMAG] Antenna array element that receives power directly from the transmitter. { 'drī-vər ,el-ə-mənt }

**driver sweep** [ELECTR] Sweep triggered only by an incoming signal or trigger. { 'drī-vər ,swēp }

**driver transformer** [ELECTR] A transformer in the input circuit of an amplifier, especially in the transmitter. { 'drī-vər tranz'fɔrmər }

**drive winding** [ELECTR] A coil of wire that is inductively coupled to an element of a magnetic memory. Also known as drive wire. { 'drīv ,wīn-dig }

**drive wire** See drive winding. { 'drīv ,wīr }

**driving clock** [ENG] A mechanism for driving an instrument at a required rate. { 'drīv-ig ,klək }

**driving-point function** [CONT SYS] A special type of transfer function in which the input and output variables are voltages or currents measured between the same pair of terminals in an electrical network. { 'drīv-ig ,pɔɪnt ,fʌŋk-shən }

**driving-point impedance** [ELECTR] The complex ratio of applied alternating voltage to the resulting alternating current in an electron tube, network, or other transducer. { 'drīv-ig ,pɔɪnt im'pēd-əns }

**driving signal** [ELECTR] Television signal that times the scanning at the pickup point. { 'drīv-ig ,sig-nəl }

**drop bar** [ELEC] Protective device used to ground a high-voltage capacitor when opening a door. { 'drāp ,bār }

**drop bracket transposition** [ELEC] Reversal of the relative positions of two parallel wire

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conductors while depressing one, so that the  
crossover is in a vertical plane. { 'dráp ,brak-ət  
tranz-pə'zish-ən }

**drop-dead halt** [COMPUT SCI] A machine halt from  
which there is no recovery; such a halt may occur  
through a logical error in programming; examples  
in which a drop-dead halt could occur are division  
by zero and transfer to a nonexistent instruction  
word. Also known as dead halt. { 'dráp ,ded  
'hólt }

**drop-in** [COMPUT SCI] The accidental appearance  
of an unwanted bit, digit, or character on a  
magnetic recording surface or during reading  
from or writing to a magnetic storage device.  
{ 'dráp ,in }

**dropout** [COMPUT SCI] The accidental disappear-  
ance of a valid bit, digit, or character from a  
storage medium or during reading from or  
writing to a storage device. [ELEC] Of a relay,  
the maximum current, voltage, power, or such, at  
which it will release from its energized position.  
[ELECTR] A reduction in output signal level during  
reproduction of recorded data, sufficient to cause  
a processing error. { 'dráp ,aüt }

**dropout current** [ELEC] The maximum current at  
which a relay or other magnetically operated  
device will release to its deenergized position.  
{ 'dráp ,aüt ,kə-rənt }

**dropout error** [ELECTR] Loss of a recorded bit or  
any other error occurring in recorded magnetic  
tape due to foreign particles on or in the magnetic  
coating or to defects in the backing. { 'dráp ,aüt  
'er-ər }

**dropout fuse** [ELEC] A fuse used on utility line  
poles which springs open when the fuse metal  
melts to provide rapid arc extinction, and which  
drops to an open-circuit position readily distin-  
guishable from the ground. Also known as flip-  
open cutout fuse. { 'dráp ,aüt ,fyüz }

**dropout voltage** [ELEC] The maximum voltage at  
which a relay or other magnetically operated  
device will release to its deenergized position.  
{ 'dráp ,aüt ,vól-tij }

**dropping resistor** [ELEC] A resistor used in series  
with a load to decrease the voltage applied to the  
load. { 'dráp -ij ri ,ziz-tər }

**drop relay** [ELEC] Relay activated by incoming  
ringing current to call an operator's attention to  
a subscriber's line. { 'dráp 'rē ,lā }

**drop repeater** [ELECTR] Microwave repeater that  
is provided with the necessary equipment for local  
termination of one or more circuits. { 'dráp  
ri ,pēd-ər }

**drop wire** [ELEC] Wire suitable for extending an  
open wire or cable pair from a pole or cable  
terminal to a building. { 'dráp ,wīr }

**drum** [ELECTR] A computer storage device con-  
sisting of a rapidly rotating cylinder with a  
magnetizable external surface on which data can  
be read or written by many read/write heads  
floating a few millionths of an inch off the surface;  
once used as a primary storage device but now  
used as an auxiliary device. Also known as drum  
memory; drum storage; magnetic drum; magnetic  
drum storage. { drəm }

**drum armature** [ELEC] An armature that has a  
drum winding. { 'drəm ,ärm-ə-čər }

**drum controller** [ELEC] An electric device that  
has a drum switch for its main switching element;  
used to govern the way electric power is delivered  
to a motor. { 'drəm kən ,trō-lər }

**drum disk rectifier** [ELEC] A mechanical rectifier  
using synchronous contacts and a copper oxide  
dry disk. { 'drəm ,disk 'rek-tə ,fī-ər }

**drum mark** [COMPUT SCI] A character indicating  
the termination of a record on a magnetic drum.  
{ 'drəm ,märk }

**drum memory** See drum. { 'drəm 'mem-rē }

**drum meter** See liquid-sealed meter. { 'drəm  
'mēd-ər }

**drum parity error** [COMPUT SCI] Parity error occur-  
ring during transfer of information onto or from  
drums. { 'drəm 'par-əd-ē ,er-ər }

**drum plotter** [ENG] A graphics output device that  
draws lines with a continuously moving pen on a  
sheet of paper rolled around a rotating drum that  
moves the paper in a direction perpendicular to  
the motion of the pen. { 'drəm ,plād-ər }

**drum printer** [COMPUT SCI] An impact printer in  
which a complete set of characters for each print  
position on a line is on a continuously rotating  
drum behind an inked ribbon, with paper in front  
of the ribbon; identical characters are printed  
simultaneously at all required positions on a  
line, on the fly, by signal-controlled hammers.  
{ 'drəm ,prɪnt-ər }

**drum recorder** [ELECTR] A facsimile recorder in  
which the record sheet is mounted on a rotating  
drum or cylinder. { 'drəm ri ,kōrd-ər }

**drum storage** See drum. { 'drəm ,stōr-ij }

**drum switch** [ELEC] A switch in which the elec-  
trical contacts are made on pins, segments, or  
surfaces on the periphery of a rotating cylinder  
or sector, or by the operation of a rotating cam.  
{ 'drəm ,swɪtʃ }

**drum transmitter** [ELECTR] A facsimile transmit-  
ter in which the subject copy is mounted on a  
rotating drum or cylinder. { 'drəm tranz'mid-  
ər }

**drum winding** [ELEC] A type of winding in electric  
machines in which coils are housed in long,  
narrow gaps either in the outer surface of a  
cylindrical core or in the inner surface of a core  
with a cylindrical bore. { 'drəm ,wɪnd-ɪŋ }

**drunk mouse** [COMPUT SCI] A mouse whose  
pointer jumps irrationally, usually as a result of  
dirt or grease on the rollers. { 'drəŋk 'maʊs }

**dry battery** [ELEC] A battery made up of a series,  
parallel, or series-parallel arrangement of dry  
cells in a single housing to provide desired  
voltage and current values. { 'dri 'bād-ə-rē }

**dry cell** [ELEC] A voltage-generating cell having  
an immobilized electrolyte. { 'dri ,sel }

**dry-charged battery** [ELEC] A storage battery in  
which the electrolyte is drained from the battery  
for storage, and which is filled with electrolyte  
and charged for a few minutes to prepare for use.  
{ 'dri ,čhärjd 'bād-ə-rē }

**dry circuit** [ELEC] A relay circuit in which open-  
circuit voltages are very low and closed-circuit

## dry contact

currents extremely small, so there is no arcing to roughen the contacts. { 'drī |sər-kət }

**dry contact** [ELEC] A contact that does not break or make current. { 'drī |kən,təkt }

**dry-disk rectifier** See metallic rectifier. { 'drī ,disk 'rek-tə,fi-ər }

**dry electrolytic capacitor** [ELEC] An electrolytic capacitor in which the electrolyte is a paste rather than a liquid; the dielectric is a thin film of gas formed on one of the plates by chemical action. { 'drī i:lek-trə'lid-ik kə'pəs-əd-ər }

**dry flashover voltage** [ELECTR] Voltage at which the air surrounding a clean dry insulator or shell completely breaks down between electrodes. { 'drī 'fləʃ,ə-vər ,vɔl-tij }

**dry plasma etching** See plasma etching. { 'drī 'plaz-mə }

**dry-plate rectifier** See metallic rectifier. { 'drī ,plət 'rek-tə,fi-ər }

**dry reed relay** [ELEC] Reed-type relay which does not use mercury at the relay contacts. { 'drī ,rēd 'rē,lā }

**dry reed switch** [ELEC] A switch having contacts mounted on magnetic reeds in a vacuum enclosure, designed for reliable operation in dry circuits. { 'drī ,rēd 'swi:tʃ }

**dry run** [COMPUT SCI] A check of the logic and coding of a computer program in which the program's operations are followed from a flow chart and written instructions, and the results of each step are written down, before the program is run on a computer. Also known as desk check. [ENG] Any practice test or session. { 'drī 'rʌn }

**Drysdale ac polar potentiometer** [ENG] A potentiometer for measuring alternating-current voltages in which the voltage is applied across a slide-wire supplied with current by a phase-shifting transformer; this current is measured by an ammeter and brought into phase with the unknown voltage by adjustment of the transformer rotor, and the unknown voltage is measured by observation of the slide-wire setting for a null indication of a vibration galvanometer. { 'drīz,dəl 'pɔlsē 'pə-lər pə'ten-čē'əm-əd-ər }

**dry-tape fuel cell** [ELEC] A fuel cell in which the fuel is in the form of a dry tape, coated with fuel, oxidant, and electrolyte, which is fed into the cell at a rate corresponding to the demand for electric energy. { 'drī ,təp 'fyūl ,sel }

**DS** See Doppler sonar

**DSB** See double-sideband modulation

**DSB-RC modulation** See double-sideband reduced-carrier modulation. { 'dē'sbē 'jər'sē ,mäj-ə,lā-shən }

**DSB-SC modulation** See double-sideband suppressed-carrier modulation. { 'dē,es,bē 'jes'sē ,mäj-ə,lā-shən }

**DSB-TC modulation** See double-sideband modulation. { 'dē'sbē 'tē'sē ,mäj-ə,lā-shən }

**D-scan** See D-display. { 'dē ,skən }

**D-scope** See D-display. { 'dē ,skɒp }

**DSECT** See dummy section. { 'dē'sekt }

**D-shell connector** [COMPUT SCI] The connector at the end of the cable between a video adapter and a monitor that is plugged into the video adapter. { 'dē,ʃel kə,nek-tər }

**DSI** See digital speech interpolation.

**DSL** See digital subscriber line.

**DSP chip** See digital signal processing chip. { 'de 'jes'pē ,tʃip }

**DSS** See decision support system.

**DSTC modulation** See double-sideband modulation. { 'dē'se:tē'sē ,mäj-ə,lā-shən }

**DTD** See Document Type Definition.

**DTL** See diode transistor logic.

**DTMF** See dual-tone multifrequency.

**DTMF dialing** See push-button dialing. { 'dējtə 'em'ef ,di-liŋ }

**DTV** See digital television.

**D/U** [COMMUN] Ratio of desired to undesired signals, usually expressed in decibels.

**dual-actuator hard disk** [COMPUT SCI] A hard disk that is equipped with two read/write heads. { 'djuəl 'æk-tʃə,wād-ər |hərd ,disk }

**dual-channel amplifier** [ENG ACOUS] An audio-frequency amplifier having two separate amplifiers for the two channels of a stereophonic sound system, usually operating from a common power supply mounted on the same chassis. { 'djuəl 'tʃən-əl 'am-plə,fi-ər }

**dual control** [CONT SYS] An optimal control law for a stochastic adaptive control system that gives a balance between keeping the control errors and the estimation errors small. { 'djuəl kən'trɔl }

**dual diversity receiver** [ELECTR] A diversity radio receiver in which the two antennas feed separate radio-frequency systems, with mixing occurring after the converter. { 'djuəl də'vər-səd-ē ri ,sē-vər }

**dual-emitter transistor** [ELECTR] A passivated *pn*p silicon planar epitaxial transistor having two emitters, for use in low-level choppers. { 'djuəl i'mid-ər tran,zis-tər }

**dual-gun cathode-ray tube** [ELECTR] A dual-trace oscilloscope in which beams from two electron guns are controlled by separate balanced vertical-deflection plates and also have separate brightness and focus controls. { 'djuəl 'gʌn ,kath,əd 'rā ,tju:b }

**dual in-line package** [ELECTR] Microcircuit package with two rows of seven vertical leads that are easily inserted into an etched circuit board. Abbreviated DIP. { 'djuəl |in ,li:n 'pak-i:ʃ }

**duality principle** Also known as principle of duality. [ELEC] The principle that for any theorem in electrical circuit analysis there is a dual theorem in which one replaces quantities with dual quantities; current and voltage, impedance and admittance, and meshes and nodes are examples of dual quantities. [ELECTR] The principle that

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analogies may be drawn between a transistor circuit and the corresponding vacuum tube circuit. [ELECTROMAG] The principle that one can obtain new solutions of Maxwell's equations from known solutions by replacing **E** with **H**, **H** with  $-\mathbf{E}$ ,  $\epsilon$  with  $\mu$ , and  $\mu$  with  $\epsilon$ . [MATH] A principle that if a theorem is true, it remains true if each object and operation is replaced by its dual; important in projective geometry and Boolean algebra. (dū'əl-əd-ē ,prɪn-sə-pəl)

**dual meter** [ENG] Meter constructed so that two aspects of an electric circuit may be read simultaneously. (dū-əl ;mēd-ər)

**dual-mode control** [CONT SYS] A type of control law which consists of two distinct types of operation, in linear systems, these modes usually consist of a linear feedback mode and a bang-bang-type mode. (dū-əl ,mōd kən'trōl)

**dual modulation** [COMMUN] The process of modulating a common carrier wave or subcarrier with two different types of modulation, each conveying separate information. (dū-əl ,mäj-ə'lā-shən)

**dual network** [ELEC] A network which has the same number of terminal pairs as a given network, and whose open-circuit impedance network is the same as the short-circuit admittance matrix of the given network, and vice versa. (dū-əl 'net ,wɜ:k)

**dual-scanned liquid-crystal display** [ELECTR] A passive matrix liquid-crystal display that is improved by being refreshed twice as frequently as standard displays of this type. (dūl ,skænd lik-wəd 'krist-əl di,spłə)

**dual-stripe magnetoresistive head** [COMPUT SCI] A type of read/write head for hard disks that has separate areas for reading and writing, reduced vulnerability to outside interference, and the ability to pack data densely on disks. (dūl 'strɪp mag,ned-ō-ri,zis-div 'hed)

**dual-tone multifrequency** [COMMUN] Signaling method employing set combinations of two specific frequencies used by subscribers and telephone private branch exchange attendants, if their switchboard positions are so equipped, to indicate telephone address digits, precedence ranks, and end of signaling. Abbreviated DTMF. (dū-əl ,tōn ,mäl-tē'frē-kwən-sē)

**dual-tone multifrequency dialing** See pushbutton dialing. (dū-əl ,tōn ,mäl-tē'frē-kwən-sē 'dī-lij)

**dual-trace amplifier** [ELECTR] An oscilloscope amplifier that switches electronically between two signals under observation in the interval between sweeps, so that waveforms of both signals are displayed on the screen. (dū-əl ,trās 'am-plə,fɪ-ər)

**dual-trace oscilloscope** [ELECTR] An oscilloscope which can compare two waveforms on the face of a single cathode-ray tube, using any one of several methods. (dū-əl ,trās ə'sɪl-ə ,skōp)

**dual-track tape recorder** See double-track tape recorder. (dū-əl ,træk 'tāp ri,kōrd-ər)

**dual-use line** [COMMUN] Communications link normally used for more than one mode of transmission, such as voice and data. (dū-əl ,yūs ,lɪn)

**dual-use radar** [ENG] Radar designed to perform both as surveillance radar and weather radar, of particular value in air traffic management where both the monitoring of aircraft and estimation of the weather environment are important. (dū-əl ,yūs 'rā,dār)

**dub** [ENG ACOUS] 1. To transfer recorded material from one recording to another, with or without the addition of new sounds, background music, or sound effects. 2. To combine two or more sources of sound into one record. 3. To add a new sound track or new sounds to a motion picture film, or to a recorded radio or television production. (dɒb)

**duct** [COMMUN] An enclosed runway for cables. (dɒkt)

**dull emitter** [ELECTR] An electron tube whose cathode is a filament that does not glow brightly. (dʌl ə'mɪd-ər)

**dumb terminal** [COMPUT SCI] A computer input/output device that lacks the capability to process or format data, and is thus entirely dependent on the main computer for these activities. (dʌm 'tɜ:m-ən-əl)

**dummy** [COMMUN] Telegraphy network simulating a customer's loop for adjusting a telegraph repeater, the dummy side of the repeater is that toward the customer. [COMPUT SCI] An artificial address, instruction, or other unit of information inserted in a digital computer solely to fulfill prescribed conditions (such as word length or block length) without affecting operations. (dʌm-ē)

**dummy antenna** [ELECTR] A device that has the impedance characteristic and power-handling capacity of an antenna but does not radiate or receive radio waves; used chiefly for testing a transmitter. Also known as artificial antenna. (dʌm-ē an'ten-ə)

**dummy argument** [COMPUT SCI] The variable appearing in the definition of a macro or function which will be replaced by an address at call time. (dʌm-ē 'är-gy-ə-mənt)

**dummy file** [COMPUT SCI] A nonexistent file which is treated by a computer program as if it were receiving its output data, when in fact the data are being ignored; used to suppress the creation of files that are needed only occasionally. (dʌm-ē 'fi)

**dummy instruction** [COMPUT SCI] An artificial instruction or address inserted in a list to serve a purpose other than the execution as an instruction. (dʌm-ē in'strək-shən)

**dummy load** [ELECTR] A dissipative device used at the end of a transmission line or waveguide to convert transmitted energy into heat, so that essentially no energy is radiated outward or reflected back to its source. (dʌm-ē ,lōd)

**dummy message** [COMMUN] A message sent for some purpose other than its content, which

## dummy parameter

- may consist of dummy groups or may have a meaningless text. { 'däm-ē'mes-i-j }
- dummy parameter** [COMPUT SCI] A parameter whose value has no significance but which is included in an instruction or command to satisfy the requirements of the system. { 'däm-ē pə'ram-əd-ər }
- dummy record** [COMPUT SCI] Meaningless information that is stored for some purpose such as fulfillment of a length requirement. { 'däm-ē'rek-ərd }
- dummy section** [COMPUT SCI] The part of an assembly language program in which the arrangement of the data in memory is specified. Abbreviated DSECT. { 'däm-ē'sek-shən }
- dump** [COMPUT SCI] To copy the contents of all or part of a storage, usually from an internal storage device into an external storage device. [ELECTR] To withdraw all power from a system or component accidentally or intentionally. { 'dämp }
- dump check** [COMPUT SCI] A computer check that usually consists of adding all the digits during dumping, and verifying the sum when retransferring. { 'dämp ,chek }
- dump power** [ELEC] Electric power, generated by any source, which is in excess of the needs of the electric system and which cannot be stored or conserved. { 'dämp ,pau-ər }
- dump routine** [COMPUT SCI] A program within a computer's operating system that handles the processing of dumps. { 'dämp rü,tēn }
- duodiode** [ELECTR] An electron tube having two diodes in the same envelope, with either a common cathode or separate cathodes. Also known as double diode. { ,dü-ō'dī,ōd }
- duodiode-pentode** [ELECTR] An electron tube having two diodes and a pentode in the same envelope, generally with a common cathode. { ,dü-ō'dī,ōd 'pen,tōd }
- duodiode-triode** [ELECTR] An electron tube having two diodes and a triode in the same envelope, generally with a common cathode. { ,dü-ō'dī ,ōd 'tri,ōd }
- duoplasmatron** [ELECTR] An ion-beam source in which electrons from a hot filament are accelerated sufficiently to ionize a gas by impact, the resulting positive ions are drawn out by high-voltage electrons and focused into a beam by electrostatic lens action. { ,dü-ō'plaz-mə,trän }
- duotriode** See double triode. { ,dü-ō'tri,ōd }
- duplex artificial line** [ELEC] A balancing network, simulating the impedance of the real line and distant terminal apparatus, which is employed in a duplex circuit for the purpose of making the receiving device unresponsive to outgoing signal currents. { 'dü,pleks ärd-ə,fish-əl 'līn }
- duplex cable** [ELEC] Two insulated stranded conductors twisted together, they may have a common insulating covering. { 'dü,pleks 'kā-bəl }
- duplex channel** [COMMUN] A communication channel providing simultaneous transmission in both directions. { 'dü,pleks 'chan-əl }
- duplex computer** [COMPUT SCI] Two identical computers, either one of which can ensure continuous operation of the system when the other is shut down. { 'dü,pleks kəm'pyüd-ər }
- duplexed system** [ENG] A system with two distinct and separate sets of facilities, each of which is capable of assuming the system function while the other assumes a standby status. Also known as redundant system. { 'dü,plekst ,sis-təm }
- duplexer** [ELECTR] A switching device used in radar to permit alternate use of the same antenna for both transmitting and receiving; other forms of duplexers serve for two-way radio communication using a single antenna at lower frequencies. Also known as duplexing assembly. { 'dü,plek-sər }
- duplexing** [COMMUN] See duplex operation. [COMPUT SCI] The provision of redundant hardware or excess capacity which can pick up the work load in the event of failure of one part of a computer system. { 'dü,pleks-iŋ }
- duplexing assembly** See duplexer. { 'dü,pleks-iŋ ə,sem-blē }
- duplex operation** [COMMUN] The operation of associated transmitting and receiving apparatus concurrently, as in ordinary telephones, without manual switching between talking and listening periods. Also known as duplexing, duplex transmission. [ENG] In radar, operation in which two identical and interchangeable equipments are provided, generally to enhance system reliability, one in an active state and the other immediately available for operation. { 'dü,pleks əp-ə'rā-shən }
- duplex transmission** See duplex operation. { 'dü,pleks tranz'mish-ən }
- duplex tube** [ELECTR] Combination of two vacuum tubes in one envelope. { 'dü,pleks 'tüb }
- duplicate record** [COMPUT SCI] An unwanted record that has the same key as another record in the same file. { 'düp-lə-kət'rek-ərd }
- duplication check** [COMPUT SCI] A check based on the identity in results of two independent performances of the same task. { 'düp-lə-kā-shən ,chek }
- duration control** [ELECTR] Control for adjusting the time duration of reduced gain in a sensitivity-time control circuit. { də'rā-shən kən'trōl }
- Dushman equation** See Richardson-Dushman equation. { 'dush-mən i,kwā-zhən }
- dust core** See ferrite core. { 'däst ,kōr }
- duty classification of a relay** [ELEC] Expression of the frequency with which the relay may be required to operate without exceeding prescribed limitations. { 'düd-ē ,klās-ə-fə,kā-shən əv ə're ,lā }
- duty cycle** [ENG] 1. The time intervals devoted to starting, running, stopping, and idling when a device is used for intermittent duty. 2. The ratio of working time to total time for an intermittently operating device, usually expressed as a percent. Also known as duty factor. { 'düd-ē ,sī-kəl }
- duty factor** [COMMUN] 1. In a pulse radar or similar system, the ratio of average to pulse power, basically, the product of the pulse width (for square pulses) and the pulse repetition

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frequency. Also known as duty ratio. 2. See duty cycle. { 'dūd-ē ,fak-tər }

**duty ratio** See duty factor. { 'dūd-ē ,rā-shō }

**DUV** See data under voice.

**DVD** [COMMUN] An optical disk that has formats for audio, video, and computer storage applications, and that uses the same basic structure as the compact disk (CD) to store data, but achieves a greater storage capability by using a track pitch less than half that of the CD, pits and lands as little as half as long as the shortest on a CD, and two substrates, bonded together. Derived from digital versatile disk; digital video disk.

**DVD-audio** [COMMUN] A DVD format for digital storage of audio information. Also known as Book C. { |dē|vē|dē 'od-ē-ō }

**DVD-RAM** See DVD-rewritable. { |dē|vē|dē 'rām }

**DVD-read-only** [COMMUN] A DVD format in which data written on the disk at the time of its manufacture are permanent, and the disk cannot be written or erased after that. Also known as Book A; DVD-ROM. { |dē|vē|dē ,rēd 'on-lē }

**DVD-rewritable** [COMMUN] A DVD format that allows audio or other digital data to be written, read, erased, and rewritten. Also known as Book E; DVD-RAM. { |dē|vē|dē ,rē'it-ə-bəl }

**DVD-ROM** See DVD-read-only. { |dē|vē|dē 'rām }

**DVD-video** [COMMUN] A DVD format for digital storage of video information. Also known as Book B. { |dē|vē|dē 'vid-ē-ō }

**DVD-write once** [COMMUN] A DVD format that allows users to record audio or other digital data in such a way that the recording is permanent and may be read indefinitely but cannot be erased. Also known as Book D. { |dē|vē|dē ,rit 'wəns }

**dwel** [ELEC] The number of degrees through which the distributor cam rotates from the time that the contact points close to the time that they open again. Also known as dwell angle. { 'dwel }

**dwell angle** See dwell. { 'dwel ,aŋ-gəl }

**dwell time** [ELECTR] The length of time a radar examines a single target in making a single estimate about it, it is limited by the antenna rotation rate and beam width in simple radars, while in more flexible radars it is established by the computer-generated scheduling of operations. Also known as look time. { 'dwel ,tīm }

**DX** See distance reception.

**dyadic processor** [COMPUT SCI] A type of multi-processor that includes two processors which operate under control of the same copy of the operating system. { dī'ad-ik 'prās,es-ər }

**dye polymer recording** [COMPUT SCI] An optical recording technique in which dyed plastic layers are used as the recording medium. { dī 'pāl-ə-mər ri'kōrd-ij }

**dynamic acceleration** See dynamic resolution. { dī'nam-ik ik,sel-ə'rā-shōn }

**dynamic address translator** [COMPUT SCI] A hardware device used in a virtual memory system to automatically identify a virtual address inquiry in terms of segment number, page number within the segment, and position of the record with reference to the beginning of the page. { dī 'nam-ik 'a,dres ,tranz,lād-ər }

**dynamic algorithm** [COMPUT SCI] An algorithm whose operation is, to some extent, unpredictable in advance, generally because it contains logical decisions that are made on the basis of quantities computed during the course of the algorithm. Also known as heuristic algorithm. { dī'nam-ik 'al-gə,rith-əm }

**dynamic beam forming** [ELECTR] A cathode-ray-tube design that ensures that the electron beam will impact a perfectly circular area of the display screen regardless of the location on the screen to which it is directed. { dī'nam-ik 'bēm ,form-ij }

**dynamic behavior** [ENG] A description of how a system or an individual unit functions with respect to time. { dī'nam-ik bə'hāv-yər }

**dynamic characteristic** See load characteristic. { dī'nam-ik kar-ik-tə'ris-tik }

**dynamic check** [ENG] Check used to ascertain the correct performance of some or all components of equipment or a system under dynamic or operating conditions. { dī'nam-ik 'chek }

**dynamic circuit** [ELECTR] A metal oxide semiconductor circuit designed to make use of its high input impedance to store charge temporarily at certain nodes of the circuit and thereby increase the speed of the circuit. { dī'nam-ik 'sər-kət }

**dynamic condenser electrometer** [ELEC] A sensitive voltage-measuring instrument in which an object carrying charge resulting from the voltage is moved back and forth in an electrostatic field and the resulting alternating-current signal is observed. { dī'nam-ik kən'den-sər i ,lek'trām-əd-ər }

**dynamic convergence** [ELECTR] The process whereby the locus of the point of convergence of electron beams in a multibeam cathode-ray tube is made to fall on a specified surface during scanning. { dī'nam-ik kən'vər-jəns }

**dynamic debugging routine** [COMPUT SCI] A debugging routine which operates in conjunction with the program being checked and interacts with it while the program is running. { dī'nam-ik dē'bæg-ij rū,tēn }

**dynamic dump** [COMPUT SCI] A dump performed during the execution of a program. { dī'nam-ik 'dʌmp }

**dynamic error** [ELECTR] Error in a time-varying signal resulting from inadequate dynamic response of a transducer. { dī'nam-ik 'er-ər }

**dynamic focusing** [ELECTR] The process of varying the focusing electrode voltage for a color picture tube automatically so the electron-beam spots remain in focus as they sweep over the flat surface of the screen. { dī'nam-ik 'fō-kas-ij }

**dynamic impedance** [ELEC] The impedance of a circuit having an inductance and a capacitance in parallel at the frequency at which this impedance has a maximum value. Also known as rejector impedance. { dī'nam-ik im'ped-əns }

**dynamicizer** [COMPUT SCI] A device that converts a collection of data represented by a spatial arrangement of bits in a computer storage device into a series of signals occurring in time. { dī'nam-ə,siz-ər }

## dynamic link

**dynamic link** [COMPUT SCI] A linking of data in two different programs, whereby modification in either program causes a similar change of the data in the other. { dī'nam-ik 'liŋk }

**dynamic loudspeaker** [ENG ACOUS] A loudspeaker in which the moving diaphragm is attached to a current-carrying voice coil that interacts with a constant magnetic field to give the in-and-out motion required for the production of sound waves. Also known as dynamic speaker; moving-coil loudspeaker. { dī'nam-ik 'laud ,spēk-ər }

**dynamic memory** See dynamic storage. { dī'nam-ik 'mem-rē }

**dynamic memory allocation** See dynamic storage allocation. { dī'nam-ik 'mem-rē al-ə ,kā-shən }

**dynamic microphone** [ENG ACOUS] A moving-conductor microphone in which the flexible diaphragm is attached to a coil positioned in the fixed magnetic field of a permanent magnet. Also known as moving-coil microphone. { dī'nam-ik 'mī-kra ,fōn }

**dynamic noise suppressor** [ENG ACOUS] An audio-frequency filter circuit that automatically adjusts its band-pass limits according to signal level, generally by means of reactance tubes; at low signal levels, when noise becomes more noticeable, the circuit reduces the low-frequency response and sometimes also reduces the high-frequency response. { dī'nam-ik 'nōiz sə ,pres-ər }

**dynamic pickup** [ELECTR] A pickup in which the electric output is due to motion of a coil or conductor in a constant magnetic field. Also known as dynamic reproducer; moving-coil pickup. { dī'nam-ik 'pik ,əp }

**dynamic plate impedance** [ELECTR] Internal resistance to the flow of alternating current between the cathode and plate of a tube. { dī'nam-ik 'plāt im ,pēd-əns }

**dynamic plate resistance** [ELECTR] Opposition that the plate circuit of a vacuum tube offers to a small increment of plate voltage; it is the ratio of a small change in plate voltage to the resulting change in the plate current, other tube voltages remaining constant. { dī'nam-ik 'plāt ri ,ziz-təns }

**dynamic printout** [COMPUT SCI] A printout of data which occurs during the machine run as one of the sequential operations. { dī'nam-ik 'print ,aūt }

**dynamic problem check** [COMPUT SCI] Any dynamic check used to ascertain that the computer solution satisfies the given system of equations in an analog computer operation. { dī'nam-ik 'prəb-ləm ,ček }

**dynamic programming** [MATH] A mathematical technique, more sophisticated than linear programming, for solving a multidimensional optimization problem, which transforms the problem into a sequence of single-stage problems having only one variable each. { dī'nam-ik 'prō-grə-miŋ }

**dynamic program relocation** [COMPUT SCI] The act of moving a partially executed program to

another location in main memory, without hindering its ability to finish processing normally. { dī'nam-ik 'prō-gram ,rē-lō ,kā-shən }

**dynamic random-access memory** [COMPUT SCI] A read-write random-access memory whose storage cells are based on transistor-capacitor combinations, in which the digital information is represented by charges that are stored on the capacitors and must be repeatedly replenished in order to retain the information. Abbreviated DRAM. { dī'nam-ik 'ran-dəm 'ak-ses ,mem-rē }

**dynamic range** [ELECTR] The ratio of the specified maximum signal level capability of a system or component to its noise level; usually expressed in decibels. { dī'nam-ik 'rāŋj }

**dynamic regulator** [ELECTR] Transmission regulator in which the adjusting mechanism is in self-equilibrium at only one or a few settings and requires control power to maintain it at any other setting. { dī'nam-ik 'reg-yə ,lād-ər }

**dynamic relocation** [COMPUT SCI] The ability to move computer programs or data from auxiliary memory into main memory at any convenient location. { dī'nam-ik ,rē-lō 'kā-shən }

**dynamic reproducer** See dynamic pickup. { dī'nam-ik rē-prō'dü-sər }

**dynamic resistance** [ELEC] A device's electrical resistance when it is in operation. { dī'nam-ik ri 'ziz-təns }

**dynamic resolution** [COMPUT SCI] A feature of some mice whereby the pointer moves a larger distance in proportion to the mouse's actual displacement when the mouse is moved quickly and a smaller distance when it is moved slowly. Also known as automatic acceleration; ballistic tracking; dynamic acceleration; variable acceleration. { dī'nam-ik ,rez-ə 'lū-shən }

**dynamic sequential control** [COMPUT SCI] Method of operation of a digital computer through which it can alter instructions as the computation proceeds, or the sequence in which instructions are executed, or both. { dī'nam-ik səkwen-chəl kən'trōl }

**dynamic shift register** [COMPUT SCI] A shift register that stores information by using temporary charge storage techniques. { dī'nam-ik 'shift ,rej-ə-stər }

**dynamic speaker** See dynamic loudspeaker. { dī'nam-ik 'spēk-ər }

**dynamic stop** [COMPUT SCI] A loop in a computer program which is created by a branch instruction in the presence of an error condition, and which signifies the existence of this condition. { dī'nam-ik 'stöp }

**dynamic storage** [COMPUT SCI] 1. Computer storage in which information at a certain position is not always available instantly because it is moving, as in an acoustic delay line or magnetic drum. Also known as dynamic memory. 2. Computer storage consisting of capacitively charged circuit elements which must be continually refreshed or recharged at regular intervals. { dī'nam-ik 'stör-ij }

**dynamic storage allocation** [COMPUT SCI] A computer system in which memory capacity is made



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available to a program on the basis of actual, momentary need during program execution, and areas of storage may be reassigned at any time. Also known as dynamic allocation; dynamic memory allocation. { dī;nam-ik|stōr-ij ,al-ə'kū-shən }

**dynamic subroutine** [COMPUT 'SCI] Subroutine that involves parameters, such as decimal point position or item size, from which a relatively coded subroutine is derived by the computer itself. { dī;nam-ik 'səb-rū,tēn }

**dynamic time warping** [ENG ACOUS] In speech recognition, the operation of compressing or stretching the temporal pattern of speech signals to take speaker variations into account. { dī;nam-ik 'tīm ,wɔrp-ij }

**dynamo** See generator. { 'dī-nə,mō }

**dynamoelectric amplifier generator** [ELEC] A generator that serves as a power amplifier at low frequencies or direct current; the input signal is applied to the stationary field to change the excitation, and the amplified output is taken from the rotating armature. { 'dī-nə,mō-'lɛk-trik 'am-plə ,fi-ər ,jɛn-ə,rād-ər }

**dynamometer** [ENG] 1. An instrument in which current, voltage, or power is measured by the force between a fixed coil and a moving coil. 2. A special type of electric rotating machine used to measure the output torque or driving torque of rotating machinery by the elastic deformation produced. { ,dī-nə'mām-əd-ər }

**dynamometer multiplier** [ELEC] A multiplier in which a fixed and a moving coil are arranged

so that the deflection of the moving coil is proportional to the product of the currents flowing in the coils. { dī-nə'mām-əd-ər 'məl-tə ,plī-ər }

**dynamostatic** [ELEC] Pertaining to a machine that uses direct or alternating current to produce static electricity. { 'dī-nə,mō'stad-ik }

**dynamotor** [ELEC] A rotating electric machine having two or more windings on a single armature containing a commutator for direct-current operation and slip rings for alternating-current operation; when one type of power is fed in for motor operation, the other type is delivered by generator action. Also known as rotary converter; synchronous inverter. { 'dī-nə,mō-dər }

**dynatron** [ELECTR] A screen-grid tube in which secondary emission of electrons from the anode causes the anode current to decrease as anode voltage increases, resulting in a negative resistance characteristic. Also known as negatron. { 'dī-nə,trən }

**dynatron oscillator** [ELECTR] An oscillator in which secondary emission of electrons from the anode of a screen-grid tube causes the anode current to decrease as anode voltage is increased, giving the negative resistance characteristic required for oscillation. { 'dī-nə,trən ,əs-ə ,lād-ər }

**dynode** [ELECTR] An electrode whose primary function is secondary emission of electrons; used in multiplier phototubes and some types of television camera tubes. Also known as electron mirror. { 'dī,nōd }

# E

- E** See electric-field vector.
- EA** See electronic attack.
- EADI** See electronic attitude directional indicator.
- E and M lead signaling** [COMMUN] Communications between a trunk circuit and a separate signaling unit over two leads: an M lead that transmits battery or ground signals to the signaling equipment, and an E lead which receives open or ground signals from the signaling unit. { 'ē an }em 'lēd ,sig-nəl-ij }
- early binding** [COMPUT SCI] The assignment of data types (such as integer or string) to variables during the compilation of a computer program rather than at run time. { 'ār-lē 'bīnd-ij }
- early effect** [ELECTR] A change in the base width of a bipolar transistor as a function of base-collector bias voltage. { 'ār-lē i ,fekt }
- Earnshaw's theorem** [ELEC] The theorem that a charge cannot be held in stable equilibrium by an electrostatic field. { 'ārn ,shōz ,thir-əm }
- EAROM** See electrically alterable read-only memory. { 'ē ,rām }
- earphone** [ENG ACOUS] 1. An electroacoustical transducer, such as a telephone receiver or a headphone, actuated by an electrical system and supplying energy to an acoustical system of the ear, the waveform in the acoustical system being substantially the same as in the electrical system. 2. A small, lightweight electroacoustic transducer that fits inside the ear, used chiefly with hearing aids. { 'ir ,fōn }
- earth** See ground. { 'ārth }
- earth current** [ELEC] Return, fault, leakage, or stray current passing through the earth from electrical equipment. Also known as ground current. { 'ārth ,kə-rənt }
- earth detector** See leakage indicator. { 'ārth di'tek-tər }
- earthed system** See grounded system. { 'ārht ,sistəm }
- earth electrode** See ground electrode. { 'ārth i ,lek ,trōd }
- earthing reactor** See grounding reactor. { 'ārth-ij rē ,ak-tər }
- earth station** [COMMUN] A facility with a land-based antenna used to transmit and receive information to and from a communications satellite. { 'ārth ,stā-shən }
- Easter-egging** [ELECTR] An undirected procedure for checking electronic equipment, which derives its name from the children's activity of searching for hidden eggs at Eastertime. { 'ē-stər ,eg-ij }
- easy** [COMPUT SCI] A name for the hexadecimal digit whose decimal equivalent is 14. { 'ē-zē }
- EBCDIC** See extended binary-coded decimal interchange code. { 'ēb-sə ,dik }
- E bend** [ELECTROMAG] A smooth change in the direction of the axis of a waveguide, throughout which the axis remains in a plane parallel to the direction of polarization. Also known as E-plane bend. { 'ē ,bend }
- EBIS** See electron-beam ion source. { 'ē ,bis }
- EBIT** See electron-beam ion trap. { 'ē ,bit or 'ē | bē 'trāp }
- e-business** See electronic commerce. { 'ē ,biz-nəs }
- ECB** See block encryption.
- Eccles-Jordan circuit** See bistable multivibrator. { 'ek-əlz 'jōrd-ən ,sər-kət }
- Eccles-Jordan multivibrator** See bistable multivibrator. { 'ek-əlz 'jōrd-ən ,məl-ti'vi ,brād-ər }
- ECDIS** See electronic chart display and information system. { 'ek ,dis or 'ē | sē | dē | 'tes }
- E cell** [ELEC] A timing device that converts the current-time integral of an electrical function into an equivalent mass integral (or the converse operation) up to a maximum of several thousand microampere-hours. { 'ē ,sel }
- echo** [ELECTR] 1. The signal reflected, or backscattered, by a radar target, or that scattered in the receiver's direction in a bistatic radar; also, the indication of this signal on the radar display. Also known as echo pulse; radar echo; return. 2. See ghost signal. { 'ek-ō }
- echo amplitude** [ELECTR] In radar, an empirical measure of the strength of a target signal as determined from the appearance of the echo; the amplitude of the echo waveform usually is measured by the deflection of the electron beam from the base line of an amplitude-modulated indicator. { 'ek-ō 'am-plə ,tūd }
- echo area** [ELECTROMAG] In radar, the area of a fictitious perfect reflector of electromagnetic waves that would reflect the same amount of energy back to the radar as the actual target. Also known as target cross section. { 'ek ,ō ,er-ē-ə }
- echo attenuation** [ELECTR] The power transmitted at an output terminal of a transmission line, divided by the power reflected back to the same output terminal. { 'ek ,ō ə ,ten-yə'wā-shən }

## echo box

**echo box** [ELECTR] A calibrated high-Q resonant cavity that stores part of the transmitted radar pulse power and gradually feeds this energy into the receiving system after completion of the pulse transmission; used to provide an artificial target signal for test and tuning purposes; being replace in design by other forms of built-in test equipment (BITE). { 'ek-ō ,bäks }

**echo check** [COMPUT SCI] A method of ascertaining the accuracy of transmission of data in which the transmitted data are returned to the sending end for comparison with original data. Also known as loopback check; loop check; read-back check. { 'ek-ō ,chek }

**echo contour** [ELECTR] A trace of equal signal intensity of the radar echo displayed on a range height indicator or plan position indicator. { 'ek-ō 'kän,tür }

**echo frequency** [ELECTR] The number of fluctuations, per unit time, in the power or amplitude of a radar target signal, often in reference to a moving target's echo going through cycles of constructive and destructive interference with coincident stationary clutter echo. { 'ek-ō ,frē-kwən-sē }

**echo intensity** [ELECTR] The brightness or brilliance of a radar echo as displayed on an intensity-modulated indicator; echo intensity is, within certain limits, proportional to the voltage of the target signal or to the square root of its power. { 'ek-ō in'ten-səd-ē }

**echo matching** [ENG] Rotating an antenna to a position in which the pulse indications of an echo-splitting radar are equal. { 'ek-ō ,mach-ig }

**echoplex technique** [COMPUT SCI] A technique for detecting errors in a data communication system with full duplex lines, in which the signal generated when a character is typed on a keyboard is transmitted to a receiver and retransmitted to a display terminal, enabling the operator to check if the character displayed is the same as the character typed. { 'ek-ō ,pleks tek,nēk }

**echo power** [ELECTR] The electrical strength, or power, of a radar target signal, normally measured in watts or dBm (decibels referred to 1 milliwatt). { 'ek-ō ,paü-ər }

**echo pulse** See echo. { 'ek-ō ,pöls }

**echo recognition** [ENG] Identification of a sonar reflection from a target, as distinct from energy returned by other reflectors. { 'ek-ō ,rek-ig ,nish-ən }

**echo repeater** [ENG ACOUS] In sonar calibration and training, an artificial target that returns a synthetic echo by receiving a signal and retransmitting it. { 'ek-ō ri,pēd-ər }

**echo signal** See target signal. { 'ek-ō ,sig-nəl }

**echo-splitting radar** [ENG] Radar in which the echo is split by special circuits associated with the antenna lobe-switching mechanism, to give two echo indications on the radarscope screen; when the two echo indications are equal in height, the target bearing is read from a calibrated scale. { 'ek-ō ,splid-ig 'rä,där }

**echo suppressor** [ELECTR] 1. A circuit that desensitizes radar navigation equipment for a fixed

period after the reception of one pulse, for the purpose of rejecting delayed pulses arriving from longer, indirect reflection paths. 2. A relay or other device used on a transmission line to prevent a reflected wave from returning to the sending end of the line. { 'ek-ō sə,pres-ər }

**echo talker** [COMPUT SCI] The interference created by the retransmission of a message back to its source while the source is still transmitting. { 'ek-ō ,tök-ər }

**ECL** See emitter-coupled logic.

**ECM** See electromagnetic control message.

**eco** See electron-coupled oscillator.

**e-commerce** See electronic commerce. { 'ē ,käm-ərs }

**economy** [COMPUT SCI] The ratio of the number of characters to be coded to the maximum number available with the code; for example, binary-coded decimal using 4 bits provides 16 possible characters but uses only 10 of them. { 'ē 'kän-ə-mē }

**ECRIS** See electron cyclotron resonance source.

**ECR source** See electron cyclotron resonance source. { 'ē'sē;är 'sörs }

**ECSW** See extended channel status word.

**ED** See electronic dummy.

**eddy-current heating** See induction heating. { 'ed-ē ,kə-rənt ,hēd-ig }

**eddy-current sensor** [ENG] A proximity sensor which uses an alternating magnetic field to create eddy currents in nearby objects, and then the currents are used to detect the presence of the objects. { 'ed-ē ,kə-rənt 'sen-sər }

**eddy-current tachometer** [ENG] A type of tachometer in which a rotating permanent magnet induces currents in a spring-mounted metal cylinder; the resulting torque rotates the cylinder and moves its attached pointer in proportion to the speed of the rotating shaft. Also known as drag-type tachometer. { 'ed-ē ,kə-rənt tə'käm-əd-ər }

**EDEL room** [ENG ACOUS] A control room in a sound-recording studio in which reflective or diffusive surfaces are placed near the loudspeaker and above the mixing console, while the rear wall behind the mixer is made absorptive. Derived from LEDE room (by reverse spelling). { 'ed-əl ,rüm or 'ē;dē;ē'el ,rüm }

**EDFA** See erbium-doped fiber amplifier. { 'ed,fä or 'ē;dē;ēfä }

**edgeboard connector** See card-edge connector. { 'ej,börd kə,nek-tər }

**edge connector** [ELECTR] A row of etched lines on the edge of a printed circuit board that is inserted into a slot to establish a connection with another printed circuit board. { 'ej kə,nek-tər }

**edge effect** [ELEC] An outward-curving distortion of lines of force near the edges of two parallel metal plates that form a capacitor. { 'ej i,fekt }

**Edison battery** [ELEC] A storage battery composed of cells having nickel and iron in an alkaline solution. Also known as nickel-iron battery. { 'ed-ə-sən 'bəd-ə-rē }

**Edison distribution system** [ELEC] Three-wire direct-current distribution system, usually 120

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to 240 volts, for combined light and power service from a single set of mains. { 'ed-ə-sən ,dis-trə-byü-shən ,sis-təm }

**Edison effect** See thermionic emission. { 'ed-ə-sən i,fekt }

**E-display** [ELECTR] A radar display format in which the horizontal coordinate indicates range, the vertical indicates elevation, and the intensity of the target spot is proportional to signal strength. Also known as E-indicator; E-scan; E-scope. { 'ē di,sp'lā }

**edit** [COMPUT SCI] 1. To modify the form or format of an output or input by inserting or deleting characters such as page numbers or decimal points. 2. A computer instruction directing that this step be performed. { 'ed-ət }

**edit capability** [COMPUT SCI] The degree of sophistication available to the programmer to modify his or her statements while in the time-sharing mode. { 'ed-ət ,kāp-ə,bil-əd-ē }

**edit check** [COMPUT SCI] A program instruction or subroutine that tests the validity of input in a data entry program. Also known as edit test. { 'ed-ət ,chek }

**edit mask** [COMPUT SCI] The receiving word through which a source word is filtered, allowing for the suppression of leading zeroes, the insertion of floating dollar signs and decimal points, and other such formatting. { 'ed-ət ,mask }

**edit mode** [COMPUT SCI] A software mode of operation in which previously entered text or data can be modified or replaced. { 'ed-ət ,mōd }

**editor program** [COMPUT SCI] A special program by means of which a user can easily perform corrections, insertions, modifications, or deletions in an existing program or data file. { 'ed-ə-tör ,prō-grām }

**edit test** See edit check. { 'ed-ət ,test }

**EDO RAM** See extended data out random-access memory. { ,ā-dō 'rām or ,ē|dē|dō }

**EDP** See electronic data processing.

**EDP center** See electronic data-processing center. { ,ē|dē'pē ,sen-tər }

**edulcorate** [COMPUT SCI] To eliminate irrelevant data from a data file. { ē'dəl-kə,rāt }

**EDVAC** [COMPUT SCI] The first stored program computer, built in 1952. Derived from electron discrete variable automatic compiler. { 'ed,vak }

**EEPROM** See electrically erasable programmable read-only memory. { ,ē'ē,prām }

**EER** See equal error rate.

**effective address** [COMPUT SCI] The address that is obtained by applying any specified indexing or indirect addressing rules to the specified address; the effective address is then used to identify the current operand. { ə'fek-tiv 'a,dres }

**effective ampere** [ELEC] The amount of alternating current flowing through a resistance that produces heat at the same average rate as 1 ampere of direct current flowing in the same resistance. { ə'fek-tiv 'am,pir }

**effective bandwidth** [ELECTR] The bandwidth of an assumed rectangular band-pass having the same transfer ratio at a reference frequency as a given actual band-pass filter, and passing the same mean-square value of a hypothetical current having even distribution of energy throughout that bandwidth. { ə'fek-tiv 'bænd ,width }

**effective capacitance** [ELEC] Total capacitance existing between any two given points of an electric circuit. { ə'fek-tiv kə'pas-əd-əns }

**effective center** [ENG ACOUS] In a sonar projector, the point where lines coincident with the direction of propagation, as observed at different points some distance from the projector, apparently intersect. Also known as apparent source. { ə'fek-tiv 'sen-tər }

**effective confusion area** [ENG] Amount of chaff whose radar cross-sectional area equals the radar cross-sectional area of the particular aircraft at a particular frequency. { ə'fek-tiv kən'fyü-zhən ,er-ē-ə }

**effective current** [ELEC] The value of alternating current that will give the same heating effect as the corresponding value of direct current. Also known as root-mean-square current. { ə'fek-tiv 'kə-rənt }

**effective earth radius** [COMMUN] A radius value used in place of the geometric radius to correct for atmospheric refraction in estimating ranges of antennas when the index of refraction in the atmosphere changes linearly with height; under conditions of standard refraction it is  $\frac{4}{3}$  the geometric radius. Also known as effective radius of the earth. { ə'fek-tiv 'ərth ,rād-ē-əs }

**effective facsimile band** [COMMUN] Frequency band of a facsimile signal wave equal in width to that between zero frequency and maximum keying frequency. { ə'fek-tiv fak'sim-ə-lē ,bænd }

**effective horizon** [COMMUN] A horizon whose distance at a given height above sea level is the distance to the horizon of a fictitious earth, having a radius  $\frac{4}{3}$  times the earth's true radius; used to estimate ranges of antennas, taking atmospheric refraction into account. { ə'fek-tiv hō'ríz-ən }

**effective instruction** [COMPUT SCI] The computer instruction that results from changing a basic instruction during program modification. Also known as actual instruction. { ə'fek-tiv in'strək-shən }

**effective isotropic radiated power** [COMMUN] A measure of the strength of the signal leaving a satellite antenna in a particular direction, equal to the product of the power supplied to the satellite transmit antenna and its gain in that direction. Abbreviated eirp. { i,fek-tiv ,ī-sə ,trāp-ik ,rād-ē,əd-əd 'paü-ər }

**effectively grounded** [ELEC] Grounded through a connection of sufficiently low impedances (inherent or intentionally added) so that fault

## effectiveness level

- grounds which may occur cannot build up voltages dangerous to connected personnel or other equipment. [ə'fek-tiv-lē 'gráund-əd]
- effectiveness level** [COMPUT SCI] A measure of the effectiveness of data-processing equipment, equal to the ratio of the operational use time to the total performance period, expressed as a percentage. Also known as average effectiveness level. [ə'fek-tiv-nəs ,lev-əl]
- effective percentage modulation** [COMMUN] For a single sinusoidal input component, the ratio of the peak value of the fundamental component of the envelope to the average amplitude of the modulated wave expressed in percent. [ə'fek-tiv pə'sent-ij ,máj-ə'lá-shən]
- effective radiated power** [ELECTROMAG] The product of antenna input power and antenna power gain, expressed in kilowatts. Abbreviated ERP. [ə'fek-tiv ,rād-ē-əd 'paú-ər]
- effective radius of the earth** See effective earth radius. [ə'fek-tiv 'rād-ē-as əv ðə 'ə:θ]
- effective resistance** See high-frequency resistance. [ə'fek-tiv ri'zis-təns]
- effective speed** [COMPUT SCI] The actual speed that a computer system can sustain over a period of time when the time devoted to various control, error-detection, and other overhead activities is taken into account. [ə'fek-tiv 'spēd]
- effective thermal resistance** [ELECTR] Of a semiconductor device, the effective temperature rise per unit power dissipation of a designated junction above the temperature of a stated external reference point under conditions of thermal equilibrium. Also known as thermal resistance. [ə'fek-tiv 'θər-məl ri'zis-təns]
- effective time** [COMPUT SCI] The time during which computer equipment is in actual use and produces useful results. [ə'fek-tiv 'tīm]
- effective value** See root-mean-square value. [ə'fek-tiv 'vəl-yú]
- effector** [CONT SYS] A motor, solenoid, or hydraulic piston that turns commands to a teleoperator into specific manipulatory actions. [ə'fek-tər]
- EFL** See error frequency limit.
- e format** [COMPUT SCI] A decimal, normalized form of a floating point number in FORTRAN in which a number such as 18.756 appears as 18756E + 02, which stands for  $18756 \times 10^2$ . [i'ē ,fór,mát]
- EGNOS** See European Geostationary Navigation Overlay System. [i'eg,nōs]
- E-HEMT** See enhancement-mode high-electron-mobility transistor.
- EHF** See extremely high frequency.
- EHSI** See electronic horizontal-situation indicator.
- E-H T junction** [ELECTROMAG] In microwave waveguides, a combination of E- and H-plane T junctions forming a junction at a common point of intersection with the main waveguide. [i'ē 'jäch 'tē ,jəŋk-shən]
- E-H tuner** [ELECTROMAG] Tunable E-H T junction having two arms terminated in adjustable plungers used for impedance transformation. [i'ē 'jäch 'tün-ər]
- eight-level code** [COMMUN] A teletypewriter code that uses eight impulses, in addition to the start and stop impulses, to define a character. [i'æt ,lev-əl 'kōd]
- E-indicator** See E-display. [i'ē ,in-'dä,kād-ər]
- Eindhoven galvanometer** See string galvanometer. [i'ɪnt,hō-vən ,gäl-və'näm-əd-ər]
- Einzel lens** [ELECTR] An electrostatic lens that consists of three cylindrical tubes through which charged particles pass sequentially, the middle one of which is at a higher potential than the other two. [i'ɪnt-səl ,lens]
- eject** [COMPUT SCI] To move the printing mechanism to the top of the following page, skipping the remainder of the current page. [i'jekt]
- E-JFET** See enhancement-mode junction field-effect transistor.
- elaboration** [COMPUT SCI] A technique, used chiefly in the Ada programming language, of setting up a hierarchy of calculated constants so that the values of one or more of them determine others further down in the hierarchy. [i,ləb-ə'rā-shən]
- elastance** [ELEC] The reciprocal of capacitance. [i'lás-təns]
- elastoresistance** [ELEC] The change in a material's electrical resistance as it undergoes a stress within its elastic limit. [i'lás-tō ri'zis-təns]
- elbow** [ELECTROMAG] In a waveguide, a bend of comparatively short radius, normally 90°, and sometimes for acute angles down to 15°. [i'el ,bō]
- electret** [ELEC] A solid dielectric possessing persistent electric polarization, by virtue of a long time constant for decay of a charge instability. [i'lek,tret]
- electret headphone** [ENG ACOUS] A headphone consisting of an electret transducer, usually in the form of a push-pull transducer. [i'lek,tret 'hed,fōn]
- electret microphone** [ENG ACOUS] A microphone consisting of an electret transducer in which the foil electret diaphragm is placed next to a perforated, ridged, metal or metal-coated backplate, and output voltage, taken between diaphragm and backplate, is proportional to the displacement of the diaphragm. [i'lek,tret 'mī-kro,fōn]
- electret transducer** [ELECTR] An electroacoustic or electromechanical transducer in which a foil electret, stretched out to form a diaphragm, is placed next to a metal or metal-coated plate, and motion of the diaphragm is converted to voltage between diaphragm and plate, or vice versa. [i'lek,tret tranz'dü-sər]
- electric** [ELEC] Containing, producing, arising from, or actuated by electricity; often used interchangeably with electrical. [i'lek-trik]
- electrical** [ELEC] Related to or associated with electricity, but not containing it or having its properties or characteristics; often used interchangeably with electric. [ə'lek-trə-kəl]
- electrical angle** [ELEC] An angle that specifies a particular instant in an alternating-current

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cycle or expresses the phase difference between two alternating quantities; usually expressed in electrical degrees. { ə'lek-trə-kəl 'aŋ-gəl }

**electrical breakdown** See breakdown. { ə'lek-trə-kəl 'brāk,dəʊn }

**electrical center** [ELEC] Point approximately midway between the ends of an inductor or resistor that divides the inductor or resistor into two equal electrical values. { ə'lek-trə-kəl 'sen-tər }

**electrical circuit theory** See circuit theory. { ə'lek-trə-kəl 'sər-kət ,thē-ə-rē }

**electrical code** [ELEC] A systematic body of rules governing the practical application and installation of electrically operated equipment and devices and electric wiring systems. { ə'lek-trə-kəl 'kōd }

**electrical conductance** See conductance. { ə'lek-trə-kəl kən'dəkt-təns }

**electrical conduction** See conduction. { ə'lek-trə-kəl kən'dəkt-shən }

**electrical conductivity** See conductivity. { ə'lek-trə-kəl ,kən,dəkt'tiv-əd-ē }

**electrical conductivity analyzer** [ELEC] Alternating-current, resistance-bridge device used to measure the electrical conductivity of solutions, slurries, or wet solids. { ə'lek-trə-kəl ,kən,dəkt'tiv-əd-ē 'an-ə,līz-ər }

**electrical degree** [ELEC] A unit equal to  $\frac{1}{360}$  cycle of an alternating quantity. { 'lek-trə-kəl dē'grē }

**electrical drainage** [ELEC] Diversion of electric currents from subterranean pipes to prevent electrolytic corrosion. { 'lek-trə-kəl 'drān-ij }

**electrical engineer** [ENG] An engineer whose training includes a degree in electrical engineering from an accredited college or university (or who has comparable knowledge and experience), to prepare him or her for dealing with the generation, transmission, and utilization of electric energy. { 'lek-trə-kəl ,en-jə'nīr }

**electrical engineering** [ENG] Engineering that deals with practical applications involving current flow through conductors, as in motors and generators. { 'lek-trə-kəl ,en-jə'nīr-ij }

**electrical equipment** [ELEC] Apparatus, appliances, devices, wiring, fixtures, fittings, and material used as a part of or in connection with an electrical installation. { 'lek-trə-kəl 'kwip-mənt }

**electrical fault** See fault. { 'lek-trə-kəl 'fōlt }

**electrical impedance** Also known as impedance. [ELEC] 1. The total opposition that a circuit presents to an alternating current, equal to the complex ratio of the voltage to the current in complex notation. Also known as complex impedance. 2. The ratio of the maximum voltage in an alternating-current circuit to the maximum current; equal to the magnitude of the quantity in the first definition. { 'lek-trə-kəl im'pēd-əns }

**electrical impedance meter** [ELEC] An instrument which measures the complex ratio of voltage to current in a given circuit at a given

frequency. Also known as impedance meter. { 'lek-trə-kəl im'pēd-əns ,mēd-ər }

**electrical instability** [ELEC] A persistent condition of unwanted self-oscillation in an amplifier or other electric circuit. { 'lek-trə-kəl ,in-stə'bīl-əd-ē }

**electrical insulator** See insulator. { 'lek-trə-kəl 'in-sə,lād-ər }

**electrical interference** See interference. { 'lek-trə-kəl ,in-tər'fir-əns }

**electrical length** [ELECTROMAG] The length of a conductor expressed in wavelengths, radians, or degrees. { 'lek-trə-kəl 'leŋkθ }

**electrical loading** See loading. { 'lek-trə-kəl 'lōd-ŋ }

**electrically alterable read-only memory** [COMPUT SCI] A read-only memory that can be reprogrammed electrically in the field a limited number of times, after the entire memory is erased by applying an appropriate electric field. Abbreviated EAROM. { 'lek-trə-klē 'ōl-trə-bəl 'rēd ,ōn-lē 'mem-rē }

**electrically connected** [ELEC] Connected by means of a conducting path, or through a capacitor, as distinguished from connection merely through electromagnetic induction. { 'lek-trə-klē kə'nek-təd }

**electrically erasable programmable read-only memory** [COMPUT SCI] An integrated-circuit memory chip that has an internal switch to permit a user to erase the contents of the chip and write new contents into it by means of electrical signals. Abbreviated EEPROM. { 'lek-trə-klē 'īrās-ə-bəl prō'gram-ə-bəl 'rēd ,ōn-lē 'mem-rē }

**electrical measurement** [ELEC] The measurement of any one of the many quantities by which electricity is characterized. { 'lek-trə-kəl 'mezʃ-ər-mənt }

**electrical model** [ELEC] A model in the form of a mathematical description or an electrical equivalent circuit that represents the behavior of an electrical device or system. { 'lek-trə-kəl 'mād-əl }

**electrical noise** [ELEC] Noise generated by electrical devices, for example, motors, engine ignition, power lines, and so on, and propagated to the receiving antenna direct from the noise source. { 'lek-trə-kəl 'nōiz }

**electrical potential energy** [ELEC] Energy possessed by electric charges by virtue of their position in an electrostatic field. { 'lek-trə-kəl pə'ten-ʃəl'en-ər-jē }

**electrical pressure transducer** See pressure transducer. { 'lek-trə-kəl 'preʃ-ər tranz,dü-sər }

**electrical properties** [ELEC] Properties of a substance which determine its response to an electric field, such as its dielectric constant or conductivity. { 'lek-trə-kəl 'prəp-ət-ēz }

**electrical resistance** See resistance. { 'lek-trə-kəl rī'zis-təns }

**electrical resistivity** [ELEC] The electrical resistance offered by a material to the flow of current, times the cross-sectional area of current flow and per unit length of current path; the reciprocal of

## electrical resistor

- the conductivity. Also known as resistivity; specific resistance. { i'lek-trə-kəl ,rē-zis'tiv-əd-ē }
- electrical resistor** See resistor. { i'lek-trə-kəl ri 'zis-tər }
- electrical resonator** See tank circuit. { i'lek-trə-kəl 'rez-ən-əd-ər }
- electrical symbol** [ELEC] A simple geometrical symbol used to represent a component of a circuit in a schematic circuit diagram. { i'lek-trə-kəl 'sim-bəl }
- electrical system** [ELEC] System of wiring, switches, relays, and other equipment associated with receiving and distributing electricity. { i'lek-trə-kəl ,sis-təm }
- electrical transcription** See transcription. { i'lek-trə-kəl tranz'krip-shən }
- electrical unit** [ELEC] A standard in terms of which some electrical quantity is evaluated. { i'lek-trə-kəl 'yü-nət }
- electrical zero** [ELEC] A standard reference position from which rotor angles are measured in synchros and other rotating devices. { i'lek-trə-kəl 'zir-ō }
- electric arc** [ELEC] A discharge of electricity through a gas, normally characterized by a voltage drop approximately equal to the ionization potential of the gas. Also known as arc. { i'lek-trik 'ärk }
- electric-arc lamp** See arc lamp. { i'lek-trik ,ärk 'lamp }
- electric cell** [ELEC] 1. A single unit of a primary or secondary battery that converts chemical energy into electric energy. 2. A single unit of a device that converts radiant energy into electric energy, such as a nuclear, solar, or photovoltaic cell. { i'lek-trik 'sel }
- electric charge** See charge. { i'lek-trik 'chärj }
- electric circuit** [ELEC] Also known as circuit. 1. A path or group of interconnected paths capable of carrying electric currents. 2. An arrangement of one or more complete, closed paths for electron flow. { i'lek-trik 'sär-kət }
- electric circuit theory** See circuit theory. { i'lek-trik 'sär-kət ,thē-ə-rē }
- electric coil** See coil. { i'lek-trik 'kōil }
- electric comparator** [ELEC] A comparator in which movement results in a change in some electrical quantity, which is then amplified by electrical means. { i'lek-trik kəm'par-əd-ər }
- electric condenser** See capacitor. { i'lek-trik kən'den-sər }
- electric conductor** See conductor. { i'lek-trik kən'dək-tər }
- electric connection** [ELEC] A direct wire path for current between two points in a circuit. { i'lek-trik kə'nek-shən }
- electric connector** [ELEC] A device that joins electric conductors mechanically and electrically to other conductors and to the terminals of apparatus and equipment. { i'lek-trik kə'nek-tər }
- electric constant** [ELEC] The permittivity of empty space, equal to 1 in centimeter-gram-second electrostatic units and to  $10^9/4\pi\epsilon^2$  farads per meter or, numerically, to  $8.854 \times 10^{-12}$  farad per meter in International System units, where  $\epsilon$  is the speed of light in meters per second. Symbolized  $\epsilon_0$ . { i'lek-trik 'kän-stənt }
- electric contact** [ELEC] A physical contact that permits current flow between conducting parts. Also known as contact. { i'lek-trik 'kän,təkt }
- electric contactor** See contactor. { i'lek-trik 'kän ,təkt-ər }
- electric control** [ELEC] The control of a machine or device by switches, relays, or rheostats, as contrasted with electronic control by electron tubes or by devices that do the work of electron tubes. { i'lek-trik kən'tröl }
- electric controller** [ELEC] A device that governs in some predetermined manner the electric power delivered to apparatus. { i'lek-trik kən'tröl-ər }
- electric converter** See synchronous converter. { i'lek-trik kən'vərd-ər }
- electric corona** See corona discharge. { i'lek-trik kə'rō-nə }
- electric current** See current. { i'lek-trik 'kə-rənt }
- electric current density** See current density. { i'lek-trik 'kə-rənt ,den-səd-ē }
- electric current meter** See ammeter. { i'lek-trik 'kə-rənt ,mēd-ər }
- electric cutout** See cutout. { i'lek-trik 'kəd,aüt }
- electric delay line** [ELECTR] A delay line using properties of lumped or distributed capacitive and inductive elements; can be used for signal storage by recirculating information-carrying wave patterns. { i'lek-trik di'lā ,līn }
- electric dipole** [ELEC] A localized distribution of positive and negative electricity, without net charge, whose mean positions of positive and negative charges do not coincide. { i'lek-trik 'dī ,pōl }
- electric dipole moment** [ELEC] A quantity characteristic of a charge distribution, equal to the vector sum over the electric charges of the product of the charge and the position vector of the charge. { i'lek-trik 'dī,pōl ,mō-mənt }
- electric discharge** See discharge. { i'lek-trik 'dis ,chärj }
- electric-discharge lamp** See discharge lamp. { i'lek-trik 'dis,chärj ,lamp }
- electric-discharge tube** See discharge tube. { i'lek-trik 'dis,chärj ,tüb }
- electric displacement** [ELEC] The electric field intensity multiplied by the permittivity. Symbolized D. Also known as dielectric displacement; dielectric flux density; displacement; electric displacement density; electric flux density; electric induction. { i'lek-trik dis'plās-mənt }
- electric displacement density** See electric displacement. { i'lek-trik dis'plās-mənt ,den-səd-ē }
- electric distribution system** See distribution system. { i'lek-trik ,dis-trə'byü-shən ,sis-təm }
- electric energy measurement** [ELEC] The measurement of the integral, with respect to time, of the power in an electric circuit. { i'lek-trik 'en-ər-jē ,mez-ər-mənt }
- electric energy meter** [ELEC] A device which measures the integral, with respect to time, of the power in an electric circuit. { i'lek-trik 'en-ər-jē ,mēd-ər }

in meters per second.  
 ik 'kän-stänt }  
 physical contact that  
 reen conducting parts.  
 { i|lek-trik 'kän,takt }  
 actor. { i|lek-trik 'kän

control of a machine  
 lays, or rheostats, as  
 c control by electron  
 o the work of electron  
 }  
 A device that gov-  
 erned manner the elec-  
 troapparatus. { i|lek-trik

ynchronous converter.  
 ischarge. { i|lek-trik

{ i|lek-trik 'kə-ränt }  
 See current density.  
 }  
 mmeter. { i|lek-trik

{ i|lek-trik 'kəd,äüt }  
 A delay line using  
 tributed capacitive  
 in be used for sig-  
 nification-carrying  
 l'lä, l'lin }  
 lized distribution of  
 ricity, without net  
 ns of positive and  
 ide. { i|lek-trik 'di

C) A quantity char-  
 acterized by the  
 ic charges of the  
 position vector of  
 }, mō-mänt }  
 je. { i|lek-trik 'dls

discharge lamp.  
 discharge tube.

The electric field  
 mitivity. Symbolic  
 displacement;  
 ment; electric dis-  
 x density; electric  
 -mänt }  
 electric displace-  
 t, 'den-säd-ē }  
 See distribution  
 -shän, 'sis-täm }  
 [ELEC] The mea-  
 surement with re-  
 spect to time,  
 cut. { i|lek-trik

A device which  
 act to time, of the  
 i|lek-trik 'enär-jē

**electric eye** See photocell; phototube. { i|lek-  
 trik 'i }

**electric field** [ELEC] 1. One of the fundamental  
 fields in nature, causing a charged body to  
 be attracted to or repelled by other charged  
 bodies; associated with an electromagnetic wave  
 or a changing magnetic field. 2. Specifically, the  
 electric force per unit test charge. { i|lek-trik  
 'fild }

**electric-field intensity** See electric-field vector.  
 { i|lek-trik 'fild in'ten-säd-ē }

**electric-field strength** See electric-field vector.  
 { i|lek-trik 'fild 'strenkth }

**electric-field vector** [ELEC] The force on a sta-  
 tionary positive charge per unit charge at a point  
 in an electric field. Designated **E**. Also known  
 as electric-field intensity; electric-field strength;  
 electric vector. { i|lek-trik 'fild 'vek-tör }

**electric filter** [ELECTR] 1. A network that trans-  
 mits alternating currents of desired frequencies  
 while substantially attenuating all other frequen-  
 cies. Also known as frequency-selective device.  
 2. See filter. { i|lek-trik 'fil-tär }

**electric flowmeter** [ELEC] Fluid-flow measure-  
 ment device relying on an inductance or  
 impedance bridge or on electrical-resistance  
 rod elements to sense flow-rate variations.  
 { i|lek-trik 'flō,mäd-är }

**electric flux** [ELEC] 1. The integral over a surface  
 of the component of the electric displacement  
 perpendicular to the surface; equal to the number  
 of electric lines of force crossing the surface.  
 2. The electric lines of force in a region.  
 { i|lek-trik 'flöks }

**electric flux density** See electric displacement.  
 { i|lek-trik 'flöks 'den-säd-ē }

**electric flux line** See electric line of force. { i|lek-  
 trik 'flöks 'līn }

**electric forming** [ELECTR] The process of applying  
 electric energy to a semiconductor or other  
 device to modify permanently its electrical char-  
 acteristics. { i|lek-trik 'fōr-mīng }

**electric fuse** See fuse. { i|lek-trik 'fyüz }

**electric heating** [ENG] Any method of converting  
 electric energy to heat energy by resisting the free  
 flow of electric current. { i|lek-trik 'häd-īng }

**electric hysteresis** See ferroelectric hysteresis.  
 { i|lek-trik 'his-tä'rē-säs }

**electrician** [ENG] A skilled worker who installs,  
 repairs, maintains, or operates electric equip-  
 ment. { i,lek'trīsh-ən }

**electric image** [ELEC] A fictitious charge used in  
 finding the electric field set up by fixed electric  
 charges in the neighborhood of a conductor;  
 the conductor, with its distribution of induced  
 surface charges, is replaced by one or more of  
 these fictitious charges. Also known as image.  
 { i|lek-trik 'im-ij }

**electric induction** See electric displacement.  
 { i|lek-trik in'dak-shän }

**electric instrument** [ENG] An electricity-measur-  
 ing device that indicates, such as an ammeter  
 or voltmeter, in contrast to an electric meter  
 that totalizes or records. { i|lek-trik 'in-strä-  
 mänt }

**electric lamp** [ELEC] A lamp in which light is  
 produced by electricity, as the incandescent  
 lamp, arc lamp, glow lamp, mercury-vapor lamp,  
 and fluorescent lamp. { i|lek-trik 'lämp }

**electric line of force** [ELEC] An imaginary line drawn  
 so that each segment of the line is parallel to  
 the direction of the electric field or of the electric  
 displacement at that point, and the density of the  
 set of lines is proportional to the electric field or  
 electrical displacement. Also known as electric  
 flux line. { i|lek-trik 'līn av 'fōrs }

**electric main** See power transmission line.  
 { i|lek-trik 'män }

**electric meter** [ENG] An electricity-measuring  
 device that totalizes with time, such as a watt-hour  
 meter or ampere-hour meter, in contrast to an  
 electric instrument. { i|lek-trik 'mäd-är }

**electric moment** [ELEC] One of a series of quanti-  
 ties characterizing an electric charge distribution;  
 an *l*-th moment is given by integrating the  
 product of the charge density, the *l*-th power  
 of the distance from the origin, and a spherical  
 harmonic  $Y_{lm}^*$  over the charge distribution.  
 { i|lek-trik 'mō-mänt }

**electric monopole** [ELEC] A distribution of elec-  
 tric charge which is concentrated at a point or is  
 spherically symmetric. { i|lek-trik 'män-ä,pöl }

**electric motor** See motor. { i|lek-trik 'mōd-är }

**electric network** See network. { i|lek-trik 'net-  
 ,wörk }

**electric octupole moment** [ELEC] A quantity  
 characterizing an electric charge distribution;  
 obtained by integrating the product of the charge  
 density, the third power of the distance from  
 the origin, and a spherical harmonic  $Y_{3m}^*$  over  
 the charge distribution. { i|lek-trik 'äkt-ä,pöl  
 'mō-mänt }

**electric outlet** See outlet. { i|lek-trik 'äüt,let }

**electric polarizability** [ELEC] Induced dipole mo-  
 ment of an atom or molecule in a unit electric  
 field. { i|lek-trik ,pō-lä,rī-zä'bīl-äd-ē }

**electric polarization** See polarization. { i|lek-trik  
 ,pō-lä-rä-zä-shän }

**electric potential** [ELEC] The work which must be  
 done against electric forces to bring a unit charge  
 from a reference point to the point in question;  
 the reference point is located at an infinite  
 distance, or, for practical purposes, at the surface  
 of the earth or some other large conductor.  
 Also known as electrostatic potential; potential.  
 Abbreviated **V**. { i|lek-trik pə'ten-chäl }

**electric power** [ELEC] The rate at which electric  
 energy is converted to other forms of energy,  
 equal to the product of the current and the  
 voltage drop. { i|lek-trik 'päü-är }

**electric power line** See power line. { i|lek-trik  
 'päü-är ,līn }

**electric power meter** [ENG] A device that mea-  
 sures electric power consumed, either at an  
 instant, as in a wattmeter, or averaged over a  
 time interval, as in a demand meter. Also known  
 as power meter. { i|lek-trik 'päü-är ,mäd-är }

**electric power station** [ELEC] A generating sta-  
 tion or an electric power substation. { i|lek-trik  
 'päü-är ,stä-shän }