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Lexicographer



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half-wave rectifier A rectifier which provides a DC output only during alternate half-cycles of its input AC. Either the positive half-cycles or the negative half-cycles are rectified, so that the delivered current always has the same polarity.

half-wave rectifier circuit A circuit which provides half-wave rectification.

half-wave transmission line An antenna transmission line whose electrical length is equal to one-half of the wavelength of the transmitted or received signal. Also called **half-wave line**.

half-wavelength Same as **half-wave (2)**.

half-wavelength antenna Same as **half-wave antenna**.

half-word For a given computer architecture, half of a computer word.

halftone Also spelled **half tone**. 1. The process of converting an image with continuous tones, such as a photograph, into an image with appropriately-spaced dots which simulate the original. When digitally printing a grayscale reproduction of such an image, the greater the number of equally-sized dots per unit area, the darker that particular segment is. Another procedure involves photographing the original through a special screen to obtain the halftone. 2. Same as **half-step**.

halide A compound containing a halogen and at least one other element. There are innumerable examples, including potassium chloride, and ammonium chloride.

halide lamp A gas-filled lamp containing a small proportion of one or more halides. Metal-halide lamps are examples.

Hall coefficient A constant of proportionality utilized when performing calculations associated with the **Hall effect**. When calculating the strength of the electric field, E_H , the following formula may be utilized: $E_H = R_H JB$, where R_H is the Hall coefficient, J is the current density, and B is the magnetic flux density. The sign of the Hall coefficient changes with the sign of the charge carrier, so it serves to indicate the sign of the majority carrier. Also called **Hall constant**.

Hall constant Same as **Hall coefficient**.

Hall effect A phenomenon observed when strip or bar of a conductor, or of certain semiconductors, is placed perpendicular to a magnetic field. When said strip or bar is longitudinally carrying a current, an electric field is developed across it. The electric field is perpendicular to both the flow of current and the magnetic field.

Hall-effect gaussmeter A gaussmeter which employs the Hall effect to measure the strength of a magnetic field.

Hall-effect generator Same as **Hall generator**.

Hall-effect magnetometer A magnetometer which employs the Hall effect to measure the strength of a magnetic field.

Hall-effect switch A switch that employs the Hall effect. Such a switch is actuated when in proximity to a magnetic field.

Hall field The electric field developed across a conductor or semiconductor due to the Hall effect.

Hall generator A generator which makes use of the Hall effect to produce an output voltage proportional to the intensity of a magnetic field. Also called **Hall-effect generator**.

Hall mobility A measure of the mobility of charge carriers in a conductor or semiconductor. It may be quantified utilizing the following formula: $\mu_H = R_H \sigma$, where μ_H is the Hall mobility, R_H is the Hall coefficient, and σ is conductivity.

Hall probe A device which employs the Hall effect to measure magnetic flux density.

Hall voltage The voltage developed across a conductor or semiconductor due to the Hall effect.

halo 1. On the screen of a CRT, such as that of a TV, an unwanted light or dark zone which surrounds an image, especially bright spots. 2. Same as **halation (1)**. 3. Same as **halation (2)**.

halo antenna A dipole antenna whose elements have been bent into a circle, and which is utilized at very-high frequencies.

halogen Any of the elements in group VII of the periodic table. These are: fluorine, chlorine, bromine, iodine, and astatine.

halogen lamp 1. A gas-filled lamp containing a small proportion of one or more halogens. 2. A **halogen lamp (1)** whose contained gas is iodine, or that of another halogen or mixture of halogens, and whose filament is composed of tungsten. The gas in these high-efficiency lamps reacts with the tungsten metal which evaporates, recycling the particles back onto the filament surface. Also called **tungsten-halogen lamp**.

halt 1. Same as **halt instruction**. 2. A break resulting from a **halt (1)**.

halt instruction In a computer program or routine, an instruction which causes a break in the execution. Also called **halt (1)**, or **stop instruction**.

ham A licensed amateur radio operator.

ham radio Also called **amateur radio**. 1. A radio receiver and/or transmitter utilized by authorized amateurs, and which is operated in the amateur band. 2. The operation of a **ham radio (1)**, especially as a hobby.

hammer A part of an apparatus which strikes another. For example, the hammer of a bell, or that of a daisy wheel.

Hamming code In data transmissions, an error-detection code which identifies single-bit and double-bit errors. For each seven bits sent, four have information, and three are check bits. It corrects one-bit errors automatically.

Hamming distance The number of digit positions which are different between two binary words of the same length. For example, the Hamming distance between 1110001 and 1110000 is one, as the last digit is different. Also called **signal distance**.

hand A device, tool, or gripping mechanism attached to the wrist of a robot arm. It can be, for example, a drill, a sensor, or a gripper with the ability to move with six degrees of freedom. Also called **end-effector**, or **robot end-effector**.

hand capacitance A capacitance between a circuit or electronic device and a human body, or a part of it, especially a hand. This may cause interference, noise, or a shift in tuning. Also called **body capacitance**.

hand generator An electric generator which is operated by manually turning a crank. It is used, for instance, in emergency radio transmitters and/or receivers.

hand-held computer Same as **handheld computer**.

hand-held device Same as **handheld device**.

hand-held PC Same as **handheld PC**.

hand-held personal computer Same as **handheld PC**. Its abbreviation is **HPC**.

hand-held scanner Same as **handheld scanner**.

hand-off Also spelled **handoff**. 1. In cellular telephony, the transfer between cells of a call in progress. This occurs as a user moves to an area where another cell provides better coverage, and should not interrupt the call in any manner. 2. The act of transferring control of a telephone call.

hand-operated Operated by, or requiring the use of hands. For example, a hand generator, or a hand receiver. Also called **manual (2)**.

hand receiver A listening device, such as an earphone or telephone receiver, which is held to the ear by hand.

hand rule Also called **Fleming's right-hand rule**, or **right-hand rule**. 1. A rule stating that if the thumb of a right hand is oriented along the same axis as the current flow through a conducting wire, that the fingers of this hand will curl along the same direction as the magnetic field produced by the

indoor equipment Equipment designed for use in the interior of a building, or another enclosure which protects it from surrounding weather.

indoor transformer A transformer designed for use in the interior of a building, or another enclosure which protects it from surrounding weather.

induce 1. To produce a given condition or effect by induction. 2. To cause or stimulate the occurrence of something.

induced charge A charge produced on a body through induction (3). Also called **induction charge**, or **inductive charge**.

induced current A current that flows through a conductor as a consequence of an applied time-varying electromagnetic field. The current is induced by the variation in the number of lines of magnetic flux intersecting with said conductor. Also called **induction current**, or **inductive current**.

induced electromotive force An electromotive force developed in a circuit or conductor through the variation in the number of lines of magnetic flux intersecting with said circuit or conductor. This occurs by moving a conductor through a magnetic field, or by changing the magnetic field which crosses a conductor. Its abbreviation is **induced emf**.

induced emf Abbreviation of **induced electromotive force**.

induced failure 1. A failure in a component, circuit, device, piece of equipment, or system, due operation beyond its rating. 2. A failure in a component, circuit, device, piece of equipment, or system, due to an external factor.

induced noise Noise in a component, circuit, device, piece of equipment, or system, resulting from **induction** (1), or **induction** (2).

induced potential Same as **induced voltage**.

induced voltage A voltage developed in a circuit or conductor through the variation in the number of lines of magnetic flux intersecting with said circuit or conductor. Also called **induced potential**.

inductance Its symbol is *L*. 1. The property of a circuit or conductor which opposes any change to the current flowing through it. That is, it opposes an applied current, and also opposes changes to an already established current. Inductance makes changes in current lag behind changes in voltage. When quantifying inductance, some multiple of henrys, such as millihenrys or microhenrys is used. Also called **electrical inertia**. 2. The property of a circuit in which a varying current induces an emf in itself or in a neighboring circuit. When the emf is induced in the same circuit it is called **self-induction**, and when the emf is induced in another circuit it is called **mutual induction**. The symbol for self-induction is *L*, and for mutual induction it is *M*. When quantifying inductance, some multiple of henrys, such as millihenrys or microhenrys is used. 3. Same as **inductor**.

inductance bridge A bridge utilized to measure an unknown inductance. Hay bridges and Maxwell bridges are examples.

inductance-capacitance Its abbreviation is *LC*. 1. A combination of inductance and capacitance in a circuit. 2. A circuit or device with a combination of inductance and capacitance, such as that provided by coils and capacitors. For example, certain types of filters. 3. Pertaining to an **inductance-capacitance** (1) or **inductance-capacitance** (2), or that incorporating or measuring this combination, such as a meter.

inductance-capacitance circuit A circuit composed of, or incorporating inductances and capacitances. Its abbreviation is *LC circuit*.

inductance-capacitance filter A filter composed of, or incorporating inductances and capacitances. Its abbreviation is *LC filter*.

inductance-capacitance meter A meter which measures and indicates inductances and capacitances. Its abbreviation is *LC meter*.

inductance-capacitance network An electric network composed of, or incorporating inductances and capacitances. Its abbreviation is *LC network*.

inductance-capacitance oscillator An oscillator whose frequency is determined by inductances and capacitances. Its abbreviation is *LC oscillator*.

inductance-capacitance-resistance Its abbreviation is *LCR*. Also called **resistance-capacitance-inductance**. 1. A combination of inductance, capacitance, and resistance in a circuit. 2. A circuit or device with a combination of inductance, capacitance, and resistance, such as that provided by coils, capacitors, and resistors. For example, certain tuned circuits. 3. Pertaining to an **inductance-capacitance-resistance** (1) or **inductance-capacitance-resistance** (2), or that incorporating or measuring this combination, such as a meter.

inductance-capacitance-resistance meter A meter which measures and indicates inductances, capacitances, and resistances. Its abbreviation is *LCR meter*.

inductance coil Same as **inductor**.

inductance loss Same as **induction loss**.

inductance standard An inductor whose inductance value is highly accurate and stable, and which serves, for instance, as a calibration standard. Also called **standard inductor**.

inductance transducer Same as **inductive transducer**.

induction 1. The generation or modification of electric fields, magnetic fields, voltages, or currents, through the influence of nearby entities. 2. The generation of an electromotive force in a circuit or conductor caused by a change in the magnetic flux through said same circuit or conductor. Also called **electromagnetic induction**. 3. The modification of the distribution of electric charge on an body as influenced by another nearby body which is charged. Positive charges will induce a negative charges, and vice versa. Also called **electrostatic induction**.

induction annealing Annealing in which the heat is generated by an **induced current**.

induction brazing Brazing in which the heat is generated by an **induced current**.

induction charge Same as **induced charge**.

induction coil A transformer which changes a DC into a high-voltage AC. Its primary winding is connected to a DC source which is periodically interrupted, and has comparatively few turns of a thicker wire. This primary winding induces a high voltage in its secondary winding, which is concentrically wound over the primary, and has many turns of a finer wire. An example is a Ruhmkorff induction coil.

induction compass A compass whose indications depend on the current induced in a coil made to revolve in the earth's magnetic field. Also called **earth inductor compass**.

induction current Same as **induced current**.

induction field 1. The portion of an electromagnetic field that is associated with the AC component, and which is responsible for any self or mutual inductance. 2. For a radiator, such as a transmitting antenna, the portion of the electromagnetic field which behaves as if permanently associated with said radiator. This contrasts with the **radiation field**, which is the portion that is propagated outward as electromagnetic waves.

induction furnace An electric furnace in which an **induced current** is passed through the material being heated.

induction generator An asynchronous machine utilized as an AC generator. Used, for example, for induction heating.

induction hardening Hardening in which the necessary heat is generated through **induction heating**.

induction heater A device utilized for **induction heating**. Such a device incorporates an RF generator, and a work coil which induces RF currents in the workpiece it surrounds. Lower frequencies are more effective for deep heat penetration, while higher frequencies are more appropriate for smaller parts or shallow heat penetration.

induction heating Heating in which an **induced current** is passed through the workpiece. The resulting eddy currents produce the heat. Usually used for materials with high electrical conductivity, such as metals. Induction heating features accuracy, fast heating cycle times, and maximum repeatability, among other benefits. Used, for instance, for soldering, annealing, brazing, metal-to-glass bonding, and shrink fitting. Also called **inductive heating**, or **eddy-current heating**.

induction instrument An instrument whose function is based on the interaction between fixed windings through which a current flows, which establishes a magnetic flux, and the current this flux induces in a movable conductor.

induction loss In a conductor, the loss of RF energy through **inductive coupling**. Also called **inductive loss**, or **inductance loss**.

induction loudspeaker Same as **induction speaker**.

induction meter A meter whose function is based on the interaction between fixed windings through which a current flows, which establishes a magnetic flux, and the current this flux induces in a movable conductor.

induction motor An AC motor in which the electric current flowing through the rotor is induced by the AC flowing in its stator. The power source is connected only to the stator. Also called **AC induction motor**.

induction soldering Soldering in which the heat is generated by an **induced current**.

induction speaker A speaker in which an induced audio-frequency current flowing through the diaphragm interacts with a steady magnetic field. This results in the movement that produces sound. Also called **induction loudspeaker**.

induction transducer Same as **inductive transducer**.

induction voltage regulator A regulating transformer in which the primary winding is connected in parallel and the secondary in series with the circuit, and in which the position of the coils relative to each other adjusts the voltage and/or phase relation of said circuit. Its abbreviation is **IVR**.

induction welding Welding in which the heat is generated by an **induced current**.

inductive Pertaining to, causing, utilizing, or arising from **inductance** or **induction**.

inductive charge Same as **induced charge**.

inductive circuit 1. A circuit in which there is **inductance** (1), or **inductance** (2). 2. A circuit in which the inductive capacitance is greater than the capacitive reactance.

inductive coordination The design, location, and operation of power-supply systems and communications systems, so as to minimize inductive interference.

inductive coupling 1. The coupling of two circuits or devices by means of an **inductance** (2). 2. The coupling of two circuits by means of a mutual inductance provided by a transformer. In RF circuits, for instance, such coupling minimizes the capacitance between stages, which improves performance. Also called **transformer coupling**.

inductive current Same as **induced current**.

inductive feedback 1. Feedback through an inductor, or via inductive coupling. 2. Feedback in an amplifier through an inductor, or via inductive coupling.

inductive heating Same as **induction heating**.

inductive interference 1. In a communications system, interference arising from induced voltages, such as those which may be produced by power lines. 2. Interference arising from induction.

inductive kick In an inductive circuit or coil, a voltage surge produced when the current flowing through it is cut off. The rapidly collapsing magnetic field causes this surge. Also called **inductive surge**, or **kickback** (1).

inductive load A load which is predominantly inductive, so that at the terminals the alternating current lags the alternating voltage. Also called **lagging load**.

inductive loss Same as **induction loss**.

inductive neutralization A method of neutralizing an amplifier, in which capacitance cancels inductance in the feedback circuit. Also called **shunt neutralization**, or **coil neutralization**.

inductive reactance The opposition to the flow of AC due to the inductance of a component or circuit. Its symbol is X_L , it is measured in ohms, and its formula is: $X_L = 2\pi fL$, where π is pi, f is frequency in hertz, and L is inductance in henries.

inductive surge Same as **inductive kick**.

inductive switching The opening and closing of **inductive circuits**. In a semiconductor device, for instance, protective measures must be taken against inductive kick to assure longevity of the switching device.

inductive transducer A transducer in which a variation of a quantity in a given form produces a variation in inductance, which in turn produces a proportional conversion to a quantity in another form. Also called **induction transducer**, or **inductance transducer**.

inductive tuning Radio tuning accomplished by varying an inductance. This may be brought about, for instance, by moving a magnetic core relative to a coil.

inductivity For a given material, the property which determines the electrostatic energy that can be stored per unit volume for a unit potential gradient. This is equivalent to the ratio of the capacitance of a capacitor using the material in question as a dielectric, to the capacitance of a capacitor using a vacuum as a dielectric. Also known as **dielectric constant**, **relative dielectric constant**, **permittivity**, **relative permittivity**, or **specific inductive capacity**.

inductometer A fixed or variable inductor whose inductance is known, and which can be utilized for measuring unknown inductances.

inductor One or more conductors wound in a series of turns, so as to introduce inductance, or to produce a magnetic field in an electric circuit. An inductor may be wound, for example, around a ferromagnetic core. Used, for instance, in transformers, electromagnets, solenoids, motors, speakers, and so on. Also known as **coil**, **inductance** (3), **inductance coil**, **electric coil**, or **magnetic coil** (1).

industrial electronics The branch of electronics that deals with industrial applications, such as computation, communication, automation, instrumentation, control, robotics, simulation, manufacturing, and so on.

industrial robot A robot constructed and programmed to perform industrial tasks such as assembling, drilling, or probing. They are usually reprogrammable, and can perform complex and repetitive tasks reliably for extended periods of time.

industrial robotics The science that deals with the design, programming, construction, operation, and maintenance of robots destined to industrial use.

industrial strength Designed and/or built to provide reliable operation while withstanding continued use under very harsh circumstances, such as extreme environmental conditions.

industrial television Same as **industrial TV**.

That is, it separates each of the multiple signals which were combined for transmission over a single channel. Also called **demultiplexer**. 2. A circuit or device which combines multiple low-speed transmissions into a single high-speed transmission, and vice versa. Also called **multiplexer** (2).

inverse multiplexing 1. The process of reversing the effects of a multiplexer. That is, the separation of each of the multiple signals which were combined for transmission over a single channel. Also called **demultiplexing**. 2. The process of combining multiple low-speed transmissions into a single high-speed transmission, and vice versa. Also called **multiplexing** (2).

inverse multiplexor Same as **inverse multiplexer**.

inverse-parallel circuit Same as **inverse-parallel connection**.

inverse-parallel connection Two tubes or semiconductor devices connected in parallel, but opposite directions, to control AC without rectification. For instance, the connection of the anode of one diode to the cathode of another, and vice versa. Also called **inverse-parallel circuit**, **back-to-back connection**, or **back-to-back circuit**.

inverse peak voltage For an electrical or electronic component or device, the maximum instantaneous value of the voltage in the direction in which there is the greater resistance to the flow of current. For example, the maximum reverse-biased voltage a semiconductor can safely handle before avalanche breakdown will occur. Also called **peak inverse voltage**, or **reverse peak voltage**.

inverse piezoelectric effect The mechanical deformation of certain crystals or ceramics when exposed to an electric field. Conversely, **direct piezoelectric effect** is the generation of an electric charge by subjecting certain crystals or ceramics to mechanical strain. Both are complementary manifestations of the piezoelectric effect. Also called **inverse piezoelectricity**, **indirect piezoelectricity**, or **reverse piezoelectric effect**.

inverse piezoelectricity Same as **inverse piezoelectric effect**.

inverse-square law A law stating that a given physical quantity will vary as the inverse square of the distance from the source. Most forms of energy that are radiated from a point source obey this law. These include electromagnetic, thermal, and nuclear energy. For instance, if the distance to a light source is halved, then the intensity of the received radiation will be four times greater. Also called **law of inverse squares**.

inverse-square law of radiation A law stating that the intensity of radiation emitted from a point source will vary as the inverse square of the distance from said source. It is an example of the inverse-square law.

inverse video On a computer display, the exchanging of the light and dark areas of the screen. That which is normally light appears as dark, and vice versa. When highlighting, for instance, the selected area is displayed as inverse video. Also called **reverse video**.

inverse voltage 1. For an electrical or electronic component or device, the voltage in the direction in which there is the greater resistance to the flow of current. Also called **reverse voltage** (3). 2. The voltage across a rectifier during the half-cycle when current does not flow.

inversion 1. A reversal of a relationship, position, order, state, phase, or the like. Also, the act or process of effectuating such a reversal. 2. The operation of forming the inverse of a quantity, operation, element, function, or the like. 3. The condition of being inside out. 4. The formation of an image which is rotated 180° about the axis of the same or another image. 5. A form of speech scrambling in which the frequencies are inverted. 6. A reversal of the usual decrease or

increase with altitude of a given atmospheric property, such as temperature. 7. The formation of an **inversion layer** (2).

inversion layer 1. The atmospheric layer through which an **inversion** (6) occurs. 2. The formation of a surface layer whose polarity is opposite to that of the bulk of a semiconductor material. This is usually produced as a result of an applied electric field, and is utilized, for instance, to form the channel of an IGFET.

invert To effectuate or subject to an **inversion**.

inverted-cone antenna A wideband antenna consisting of a series of wires which have a common feed point, and whose overall shape is that of a cone with its vertex on the bottom. The wires are attached to supporting poles.

inverted file In data management, an access method in which multiple attributes of the data contained in a file are indexed. These attributes can be used in any combination to identify any records containing them. In this manner, a file can be accessed through an indexed attribute value, as opposed to having to find the attribute value of a specific record, making searches faster.

inverted-L antenna An antenna consisting of a horizontal wire or radiator with a vertical feeder or lead-in wire connected to one end, and whose shape resembles an inverted letter L. Used, for instance, for shortwave reception. Also called **L antenna**.

inverted list An index or list containing the attributes of data when indexing **inverted files**.

inverter Also called **inverter circuit**. 1. A circuit or device that changes a DC voltage to an AC voltage. Frequently, the output voltage is much higher than that of the input. Used, for instance, in uninterruptible power supplies. Also called **DC-AC converter**, or **static inverter**. 2. A circuit which has a single input, and whose output is high when the input is low, and vice versa. Also called **NOT gate**. 3. A circuit which converts a positive signal into a negative one and/or vice versa. 4. A circuit which reverses the polarity of a signal. For instance, an inverting amplifier.

inverter circuit Same as **inverter**.

inverting amplifier An amplifier which introduces a 180° phase shift during the process of amplification. That is, the amplified output signal has the opposite polarity of the input signal. This contrasts with a **non-inverting amplifier**, whose output is in phase with its input.

inverting connection A connection to an **inverting input**. An example is a connection to an input of a differential amplifier or operational amplifier which introduces such a phase shift during the process of amplification.

inverting input An input of a circuit or device whose output has the opposite polarity of said input. For instance, that of an inverting amplifier. Also called **inverting terminal**.

inverting terminal Same as **inverting input**.

inverting transistor A transistor utilized as an inverter for a digital or analog signal.

invisible GIF A GIF which shows the background through all or part of an image. Used, for instance, for smooth blending of graphics on Web pages, or for spying on users utilizing Web bugs. Also called **clear GIF**, or **transparent GIF**.

invisible Web Web content which is not found using search engines. Such content may be located, for instance, by using a given Web site's search feature. Also called **deep web**.

invoke In computers, to call, start, or activate a command, routine, program, function, process, or the like.

Inward Wide-Area Telephone Service A WATS service that is configured only for receiving incoming calls. Such calls, for instance may be originated from a specific region only, or nationwide. This contrasts with an **Outward Wide-Area**

potential barrier

ered to be zero. When 1 joule is required to bring 1 coulomb of charge, the potential is equal to 1 volt. Its symbol is V , and it is expressed in volts. Its abbreviation is **pot**. Also called **electric potential**, or **electrostatic potential**.

potential barrier Within a field of force, a region in which the potential is such that it opposes the passage of a particle through it, or the movement of a particle subject to said field. Observed, for instance, in junction diodes. Also called **potential hill**.

potential difference The difference in potential between two points, especially those of a circuit. It is the work required to move a unit charge between these points. Its abbreviation is **PD**, and its symbol is U , or ΔV . When expressed in volts, as it usually is, also called **voltage**. Also called **electric potential difference**.

potential divider A component, circuit, or device which is utilized to provide an output which is a desired fraction of the input potential difference. For instance, a resistor, variable resistor, tapped resistor, or combination of resistors with taps, movable contacts, or junctions may be utilized for this purpose. Also called **voltage divider**.

potential drop 1. The potential difference between any two points of a circuit or conductor. 2. The potential difference between any two points of a circuit or conductor, due to the flow of current. Also called **voltage drop** (1), or **drop** (3). 3. The potential difference between the terminals of a circuit element, due to the flow of current. Also called **voltage drop** (2), **drop** (4).

potential energy The energy a body possesses as a consequence of its position, configuration, or state. Potential energy provides a body with the capacity to do work. Examples include the energy stored in a capacitor, or that in a compressed spring. Its abbreviation is **PE**.

potential gradient For a given conductor or dielectric, the voltage per unit length. Also called **voltage gradient**.

potential hill Same as **potential barrier**.

potential transformer A transformer utilized to provide an output voltage different than the input voltage. It is a step-down transformer when the output voltage is lower than the input voltage, or a step-up transformer when the output is higher than the input voltage. Used, for instance, as an instrument transformer. Also called **voltage transformer**.

potentiometer Its abbreviation is **pot**. 1. A variable resistor incorporating a sliding contact or tap, so as to allow a variable proportion of the total resistance to be included in a circuit. It is usually utilized as a potential divider. 2. A **potentiometer** (1) used as a volume control. 3. A device or instrument which incorporates one or more calibrated resistors, and which is utilized to measure unknown potential differences when compared with a precisely known potential difference, such as that of a standard cell.

potentiometry 1. The use of **potentiometers** to study and measure unknown potential differences. 2. The study and measurement of unknown potential differences, such as those in quantitative electrochemical analysis.

POTS Acronym for plain old telephone service. Analog land-based telephone service with no added features, consisting simply of one or more single-line telephone instruments connected to a public switched telephone network.

POTS splitter Abbreviation of plain old telephone service **splitter**. A filter which separates the voice and data signals of a telephone line via which DSL service is accessed. The voice frequencies are in the lower frequency range, and the data is in the higher interval. Not all DSL services require a POTS splitter. Also called **splitter** (3), or **DSL splitter**.

potted circuit An electric circuit which is embedded, encased, or immersed in a material to protect it from its surrounding environment. For example, a circuit which is immersed in oil or embedded in rubber, and surrounded by a metal case.

potting The process of embedding, encasing, or immersing a circuit in a material to protect it from its surrounding environment.

potting material A material, such as wax, plastic, rubber, or resin, utilized for **potting**.

pound Its abbreviation, **lb**, is taken from the Latin word for pound, *libra*. 1. A unit of mass equal to exactly 453.59237 grams. Also called **pound mass**. 2. A unit of mass equal to approximately 373.242 grams. Used in certain contexts, such as the indication of mass of precious metals or stones. 3. A unit of weight or force equal to the force of gravity on one **pound** (1). This value varies by location, and is equal to approximately 4.44822 newtons. Also abbreviated **lbf**, which is more proper than **lb**. Also called **pound force**.

pound-foot A unit of torque equal to approximately 1.35582 newton meter. Its abbreviation is **lbf ft**, or **lb ft**. Also called **foot-pound** (2).

pound force Same as **pound** (3).

pound mass Same as **pound** (1).

poundal A unit of force equal to approximately 0.138255 newton. Its abbreviation is **pdl**, or **pl**.

pounds per square foot A unit of pressure equal to approximately 47.88026 pascals. Its abbreviation is **lbf/ft²**, or **psf**.

pounds per square inch A unit of pressure equal to approximately 6.894757 kilopascals. Its abbreviation is **lbf/in²**, or **psi**.

powdered-iron core A magnetic core made from powdered ferrite. The particles are mixed with an appropriate binder, and the core is formed through applied pressure. Used, for instance, as a radio-frequency choke, or for magnetic storage. Also called **ferrite core**, or **dust core**.

power 1. The rate at which energy is expended, or at which work is performed. Its symbol is P , its abbreviation is **pwr**, and it is usually expressed in watts, or some multiple of watts, such as megawatts. When dealing specifically with the rate at which electric energy is utilized in a DC circuit or system, it is equal to the potential difference, expressed in volts, multiplied by the current, expressed in amperes. In an AC circuit or system, **true power** is the rate at which work is performed or energy is transferred, **apparent power** is the product of the RMS current and the RMS voltage, while **reactive power** is the power in an AC circuit which cannot perform work. Also called **electric power** (1). 2. To provide **power** (1). 3. A number indicating the exponent to which another number, the base, is raised. For example, in 2^8 , the 8 is the power, and the 2 is the base. Also called **exponent**. 4. The product obtained when multiplying a given number by a given **power** (3). For instance, in 2^8 , 2 is raised to the 8th power, which results in 256. 5. The multiplication of a given number or value by another, to express a multiple of a given standard or reference. For instance, 256X oversampling, or a 64x DVD drive. 6. A measure of the ability of a lens, or optical system, to magnify an image or object.

power adapter A converter that changes the AC available from an electrical outlet into a low-voltage source of DC power. Utilized, for instance, to provide for the energy requirements of portable devices such as notebook computers, in cell phone chargers, and so on. Also called **AC adapter**.

power amplification 1. For a given component, circuit, device, stage, piece of equipment, or system, the production of an output power which is greater than the input power. 2. For an amplifying device such as a transistor, electron tube, or photomultiplier tube, the ratio of the output power to the input power. Also called **power gain** (2), or **power ratio**. 3. Same as **power output** (1).

power amplifier An amplifier designed to provide an output power which is much greater than the input power. Such an amplifier is utilized to deliver power to a load, such as a loudspeaker. When there are multiple amplifiers, or ampli-

one whose resistance may be adjusted, while that of a fixed resistor cannot be varied. Also called **resistance element** (2), **resistor element** (2), or **resistance** (4).

resistor box Same as **resistance box**.

resistor braking Same as **resistance braking**.

resistor color code A system utilizing markings, such as color dots and bands, to indicate resistor information such as values, multipliers, and tolerance.

resistor core The insulated core around which resistance wire is wound, as in the case of a wire-wound resistor.

resistor decade Same as **resistance decade**.

resistor decade box Same as **resistance decade**.

resistor element 1. Same as **resistance element**. 2. Same as **resistor**.

resistor fuse A low-value resistor used as a fuse. It is usually utilized to protect a circuit, device, piece of equipment, or system when power is first applied. Also called **fusible resistor**.

resistor material Same as **resistance material**.

resistor network 1. An electric network composed of multiple resistors. For multiple resistors connected in parallel, for instance, the total resistance is the sum of the reciprocal of each of the individual resistors. 2. An electric network incorporating multiple resistors.

resistor pad Same as **resistance pad**.

resistor strip Same as **resistance strip**.

resistor-transistor logic An early form of semiconductor logic in which resistors and transistors carry out logic functions. Its abbreviation is **RTL**.

resistor wire Same as **resistance wire**.

resistors in parallel Two or more resistors connected in parallel. The total resistance is the sum of the reciprocal of each of the individual resistors, thus, the multiple resistors have a lower total resistance than the lowest valued resistor. Also called **parallel resistors**, or **shunt resistors**.

resistors in series Two or more resistors connected in series. The total resistance is the sum of the values of each the individual resistors. Also called **series resistors**.

resize To change the dimensions of something. For example, that of an image or window displayed on a computer monitor. Also called **size** (4), or **scale** (6).

resolution Its abbreviation is **res**. 1. The minimum difference between two values, quantities, or entities, which can be distinguished by, separated, or acted upon, by a detector, sensor, measuring device, or the like. Also, such differentiation. 2. The smallest detail which can be distinguished by, or acted upon, by a detector, sensor, measuring device, or the like. Also, such differentiation. 3. The minimum distance between two objects which can be distinguished. For example, the angular resolution of a telescope, or the range resolution of a radar. Also called **resolving power** (1). 4. The minimum distance between two separate and recognizable objects presented on a display screen, such as that of a radar. Also called **resolving power** (2). 5. The extent to which an optical system can reproduce the points, lines, and surfaces of an object as distinct entities in an image. 6. The precision with which a quantity or value can be measured or indicated. 7. The minimum adjustment which is detectable, or which can be made by a given system or mechanism, such as a control system. 8. The process of separating something into its constituent parts. Also, such a separation. For instance, the dispersion of white light into its component colors by a prism. 9. The degree of sharpness, clarity, and fineness of detail which a display screen, scanner, printer, or other such device is capable of presenting, processing, or producing. Monitors, for instance, may express resolution in terms of the number of pixels displayed and dot pitch. Also, the resolution setting of such a device. Also, the fine-

ness present in such a displayed, processed, or printed image.

resolution chart A chart, such as that with groups of parallel lines of varying width, which serves to determine the resolution of a TV or monitor. It is a type of test pattern. Also called **resolution pattern**.

resolution pattern Same as **resolution chart**.

resolving power 1. Same as **resolution** (3). 2. Same as **resolution** (4). 3. In spectroscopy, the ability to separate or differentiate between measured parameters of nearly equal magnitude or value. For example, the separation of particles with nearly identical mass by a mass spectrometer, or the differentiation of spectral lines of nearly equal wavelength by a spectroscope.

resonance 1. The condition in which a circuit, body, or system exhibits enhanced vibration or oscillation at a given frequency, called **resonant frequency**. There are many examples, including acoustic, atomic, beam, magnetic, and spin resonance. 2. The condition in which a circuit, body, or system exhibits enhanced vibration or oscillation when acted upon by an external force which is at or near the resonant frequency of said circuit, body, or system. 3. The condition in which the amplitude or intensity of a phenomenon is enhanced at frequencies or energies which are at or near a given value. 4. The condition in which the response of a circuit or system is enhanced when the driving signal is at or near the resonant frequency of said circuit or system. Also, the condition of exhibiting maximum response at said frequency. 5. The condition in which of acoustic waves are intensified at certain frequencies due to **resonance** (1). Also called **acoustic resonance** (1). 6. The condition in which an object close to a sound source vibrates along with said source.

resonance absorption Absorption, such as that of rays or particles, which is enhanced at given frequencies.

resonance bridge A four-arm AC bridge that incorporates a series- or parallel-resonant arm, and which is balanced at its resonant frequency. Also called **resonant bridge**.

resonance cavity Same as **resonant cavity**.

resonance characteristic Same as **resonance curve**.

resonance circuit Same as **resonant circuit**.

resonance curve A curve depicting the response of a resonant circuit, or other body or system exhibiting resonance. In the case of a circuit, for instance, such a graph usually shows current or voltage in the vertical axis, and frequency in the horizontal axis. Also called **resonance characteristic**.

resonance filter Same as **resonant filter**.

resonance fluorescence Same as **resonance radiation**.

resonance frequency Same as **resonant frequency**.

resonance luminescence Same as **resonance radiation**.

resonance radiation The emission of electromagnetic radiation, such as light, by a body which has been excited at its resonant frequency by another form of energy, such as electron bombardment. Also called **resonance luminescence**, **resonance fluorescence**, **resonant radiation**, **resonant luminescence**, or **resonant fluorescence**.

resonance width The interval of frequencies within which a resonator can resonate. The narrower the resonance width, the higher the Q of a given resonator.

resonant antenna An antenna whose parameters, such as capacitance and inductance, provide for resonance at its operating frequency. Also called **tuned antenna**.

resonant bridge Same as **resonance bridge**.

resonant cavity An enclosure which is able to maintain an oscillating electromagnetic field when suitably excited. The geometry of the cavity determines the resonant frequency. Used, for instance, in lasers, klystrons, or magnetrons, or as

a filter. Also known by various other names, including **resonating cavity**, **resonant chamber**, **resonance cavity**, **rhumbatron**, **cavity (2)**, **cavity resonator**, **microwave cavity**, **microwave resonance cavity**, and **waveguide resonator**.

resonant chamber Same as **resonant cavity**.

resonant circuit A circuit whose parameters provide for resonance at a single frequency. In a parallel-resonant circuit, for instance, a capacitor and an inductor are connected in parallel with an AC source, which provides for resonance at or near the maximum impedance of such a circuit. Also called **resonance circuit**.

resonant dipole A dipole antenna whose parameters, such as capacitance and inductance, provide for resonance at its operating frequency. Also called **resonant dipole antenna**, or **tuned dipole**.

resonant dipole antenna Same as **resonant dipole**.

resonant filter A filter whose action results in the boosting of certain frequencies, inducing resonance. Also called **resonance filter**.

resonant fluorescence Same as **resonance radiation**.

resonant frequency Also called **resonance frequency**. 1. A frequency at which a circuit, body, system, or phenomena exhibits enhanced vibration, oscillation, response, absorption, amplitude, or the like. For instance, the vibration of a piezoelectric transducer is greatest with the least applied voltage at its resonant frequency. That of a resonant cavity is determined by its geometry, and so on. 2. The frequency at which a body or system resonates without an external driving force. Also called **natural resonant frequency**, or **self-resonant frequency**.

resonant line Also called **resonant transmission line**. 1. A transmission line which has reflections, and therefore has standing waves. 2. A transmission line which resonates at the frequency utilized.

resonant luminescence Same as **resonance radiation**.

resonant radiation Same as **resonance radiation**.

resonant resistance The resistance of a resonant circuit or resonant line at its resonant frequency.

resonant transmission line Same as **resonant line**.

resonate To exhibit or produce **resonance**.

resonating cavity Same as **resonant cavity**.

resonator That which exhibits or produces **resonance**. For example, an acoustic cavity, or a crystal resonator.

resource A means utilized to perform one or more operations, or to accomplish a given task. In computers, for instance, resources include storage devices, processors, and applications.

resource allocation 1. The designation or distribution of **resources**. 2. The reserving of computer resources for specific purposes.

Resource Description Framework A framework for describing and processing metadata. Used, for instance, to enhance the capabilities of search engines, or for cataloging Web site content. Its abbreviation is **RDF**.

resource requirements The minimum software and/or hardware a system must have in order for a given program or device to work properly. For example, to run a given application a computer needing to have a minimum amount of available memory and disk space, one of the supported operating systems, an available port, and so on.

Resource Reservation Protocol A communications protocol which allows for the reservation of a given bandwidth, and which confers a high priority to the packets sent during the subsequent transmission. Used, for instance, for multicasting of real-time of audio and/or video programming. Its ab-

breivation is **RSVP**. Also called **Resource Reservation Setup Protocol**, or **Reservation Protocol**.

Resource Reservation Setup Protocol Same as **Resource Reservation Protocol**. Its abbreviation is **RSVP**.

resource sharing The distribution of **resources**, or their or simultaneous use by multiple users or entities.

resources management The management of **resources**.

responder Also called **responzor**. 1. A device or system which incorporates both a transmitter and a receiver, and which emits the appropriate signals automatically when the specified trigger signals are received. Used, for instance, in satellite communications, or in radars. Also called **transponder (1)**. 2. The part of a **responder (1)** which transmits signals when triggered by an **interrogator (1)**. An example is a radar beacon.

response 1. A change in the behavior, operation, or function of a component, circuit, device, piece of equipment, system, mechanism, process, material, or the like, as a consequence of a change in its external or internal environment. For example, a change in output resulting from a change in input. 2. A quantified **response (1)**, such as a frequency response. 3. The automatic emission of the appropriate signals when specified trigger signals are received, as seen, for instance, in a **responder (1)**. Also called **reply**.

response characteristic The gain or loss of a circuit, device, piece of equipment, or system, as a function of its input signal frequencies. Also called **frequency-response characteristic**, or **frequency characteristic**.

response curve A graph representing the **response (1)** of a component, circuit, device, piece of equipment, or system. An example is a frequency-response curve.

response delay Same as **response time**.

response interval Same as **response time**.

response time Also called **response delay**, or **response interval**. 1. The time interval that elapses between the reception of a trigger signal and the corresponding **response (1)**. 2. The time interval that elapses between a change in the external or internal environment of a component, circuit, device, piece of equipment, system, mechanism, process, material, or the like, and the corresponding **response (1)**. For example, the time required for an instrument to update its reading when a monitored parameter varies.

responzor Same as **responder**.

rest energy The energy of a particle at rest, according to the mass-energy equation. The rest energy of an electron, for instance, is approximately 0.511 MeV, while that of a proton is approximately 938 MeV. Also called **self-energy**.

rest mass The mass of a particle at rest. The rest mass of an electron, for instance, is equal to approximately 9.10939×10^{-31} kg, while that of a proton is approximately 1.67262×10^{-27} kg.

rest position The position a device, mechanism, or object is in when no signal is applied. Also, the position returned to once a signal is no longer present. Also called **resting position**.

rest state Same as **resting state**.

restart To again start up a device, piece of equipment, unit, or system. For example, a checkpoint/restart. Also spelled **re-start**.

resting position Same as **rest position**.

resting state Also called **rest state**, **idle state**, or **quiescent state**. 1. A state in which a component, circuit, device, piece of equipment, or system is functioning under normal operating conditions, but does not have an applied signal at a given time. Also called **standby (1)**. 2. A state in which a device, piece of equipment, or system is operational and available, but is not in use. Also called **standby (2)**.

ter (1). 2. A circuit, device, or system which converts audio, video, or other content into radio waves which are emitted. AM, FM, and AM/FM transmitters are examples. Also called **transmitter (2)**, **radio transmitter**, or **radio sender**.

sensation level For a given individual, the level, expressed in dB, of a sound relative to the individual's hearing threshold for that sound. For example, a noise bandwidth presented at 30 dB sensation level. Its abbreviation is **SL**. Also called **level above threshold**.

sense 1. The ability of a component, device, piece of equipment, system, or entity, to detect or otherwise perceive a given phenomenon, state, or condition. Also, the action of such perception. For example, to detect a direction or polarity, or to be aware of the state of a relay. 2. In computers, to read data. Also, a read operation.

sense amp Abbreviation of **sense amplifier**.

sense amplifier Its abbreviation is **sense amp**. 1. A circuit or device that detects and amplifies very low voltages. 2. A **sense amplifier (1)** whose output is a fixed voltage.

sense antenna An antenna which indicates the direction from which a radio signal arrives. Used, for instance, in a direction finder. Also called **sensing antenna**.

sense circuit Same as **sensing circuit**.

sense resistor A resistor utilized as a **sensor**. Used, for instance, to detect a current or a voltage in a circuit. Also called **sensing resistor**.

sensing antenna Same as **sense antenna**.

sensing circuit A circuit that serves as a **sensor**. For example, a circuit in a pacemaker which detects electrical activity in the heart. Also called **sense circuit**.

sensing element A probe or other part or section of a **sensor (1)**, which samples or otherwise detects. Also called **sensor (2)**.

sensing resistor Same as **sense resistor**.

sensitive 1. Able to detect or sense phenomena or stimulation. Also, able to change or otherwise respond to a given phenomenon, action, or circumstance. For example, that which is photosensitive. 2. Able to detect and respond to very small or subtle changes. Said, for instance, of an instrument. 3. Able to distinguish between two or more levels, settings, states, or the like. For example, case sensitive. 4. Harmed or otherwise adversely affected by a given phenomenon, condition, level, or the like. For instance, electrostatic discharge sensitive.

sensitive device 1. A device which responds to a given stimulus or signal. For example, a photosensitive device, or a passband filter. 2. A **sensitive device (1)** that responds to very slight stimuli or signals.

sensitivity 1. The ability to detect or otherwise perceive a given phenomenon, state, condition, or level. Also, the degree of such sensitivity. 2. The magnitude of the response of a component, circuit, device, instrument, piece of equipment, system, or material, to a given stimulus, level, or other input signal. For instance, the ohms-per-volt rating of a voltmeter, or the magnitude of the deflection of an indicating needle in response to a given change in a detected variable. 3. The minimum input signal that produces a given output signal. For example, the minimum input signal level that a specific radio receiver needs to produce a stated output level. 4. The proportion of the audio-frequency electrical power input to a loudspeaker which is converted into acoustic energy. Efficiency may be measured, for instance, by driving a loudspeaker with a power input of 1 watt, and measuring its output, in decibels, at a distance of 1 meter. Also called **speaker efficiency**, **loudspeaker efficiency**, or **efficiency (3)**.

sensitivity adjustment An adjustment made utilizing a sensitivity control.

sensitivity control A control, such as that in a receiver, which adjusts sensitivity.

sensitivity-time control An automatic control circuit which modifies the gain of a receiver at set intervals, so as to maintain the output signal levels within a desired amplitude, in response to varying input signals. To do so, it reduces sensitivity to strong signals, while increasing it for weak ones. Such modifications are usually anticipated, as when a loran receiver adjusts its gain between successive pulses from fixed transmitters. Its abbreviation is **STC**. Also called **sensitivity-time control circuit**, **differential gain control**, **gain-time control**, or **gain-sensitivity control**.

sensitivity-time control circuit Same as **sensitivity-time control**.

sensitometer An instrument which measures and indicates the photosensitivity of materials.

sensitometry The measurement and techniques involved in the use of **sensitometers**.

sensor 1. A component, circuit, device, instrument, piece of equipment, system, material, or mechanism which serves to **sense (1)**, and respond. A sensor may, for instance, detect a given value, or any change in values. There are many examples, including acoustic, pressure, contact, force, motion, proximity, position, light, optical, radiation, infrared, ultraviolet, radio-frequency, magnetic, photoelectric, and time sensors. Most sensors convert a non-electrical phenomenon into a proportional electrical equivalent, and nearly all transducers are sensors of some kind. A sensor may provide an analog or digital output, the latter being used, for instance, for computer applications. Contact sensors detect objects and phenomena through physical contact with an object or medium, while non-contact sensors have no such contact. 2. Same as **sensing element**.

sentry robot Same as **security robot**.

separation 1. The act of dividing something. For instance, a disk partitioning, the removal of a gas from a solid it was trapped in, or the separation of individual pulses within a train. 2. The location or area where a **separation (1)** occurs. 3. Any space or interval resulting from a **separation (1)**. 4. In a stereo audio component, the extent to which the information from one channel is absent from the other. Usually expressed in decibels. Also called **stereo separation**, or **channel separation (2)**.

separation circuit A circuit which serves to separate signals or components of signals. For example, a circuit separating the chrominance and luminance signals within a video signal.

separation energy The energy required to remove a particle, such as a proton, from a nucleus.

separator That which serves to divide, cut, sort, isolate, or the like. For example, an electrostatic separator, a frequency separator, an amplitude separator, an information separator, or the dielectric material which isolates the conductors of a capacitor.

septa The plural form of **septum**.

septagon A closed geometric figure bounded by seven straight lines.

septillion A number equal to 10^{24} .

septum A partition or membrane which divides two cavities. For instance, that which partitions a waveguide. Its plural form is **septa**.

sequence 1. An arrangement of two or more things, entities, or events, in a given order. 2. An arrangement of two or more things, entities, or events, in a successive order. 3. That which is ordered by a **sequence (1)** or **sequence (2)**. 4. To arrange in a **sequence (1)** or **sequence (2)**.

sequence counter Same as **sequence register**.

rection as the main pulse that produced it. 4. Same as **trailing edge**. 5. A brief signal that remains after the actuating signal is removed. For example, a brief signal emitted by a transmitter after talking has stopped.

tailing An unwanted prolongation in the decay of a signal. In fax, or example, this may manifest itself as a tail that forms on the lines in the recorded copy. Also called **hangover** (2).

take-down Same as **takedown**.

take-down time Same as **takedown time**.

take-up reel In a tape player or system, the reel which winds the tape after it is played or recorded upon. The **supply reel** holds the tape before reproduction or recording. Also spelled **takeup reel**.

takedown After an operating cycle, the series of operations required to prepare a component, circuit, device, piece of equipment, system, material, or mechanism for the next cycle. Also spelled **take-down**.

takedown time The time interval required to complete a **takedown**. Also spelled **take-down time**.

takeup reel Same as **take-up reel**.

talk battery The DC voltage, typically 48V, which a central office supplies via the local loop for operation of a telephone. The ring voltage is usually higher.

talk-listen switch In an intercom or similar device, a switch that changes from the transmitting to the receiving mode, and vice versa. When a single speaker is used, it also serves to change to and from its microphone function.

talk power The power of an audio signal that is within the speech frequencies. Also called **speech power**, or **voice power**.

talk time The length of time a cell phone can be utilized for conversations. Usually expressed in minutes or hours. Also spelled **talktime**.

talker A command-driven technology which enables multiple users to interact with each other over the Internet, and which is utilized especially for real-time chatting.

talktime Same as **talk time**.

TAM Abbreviation of **telephone answering machine**.

tamper 1. A material which is placed around the core of a nuclear reactor to reflect neutrons back to said core, preventing their escape. Also called **reflector** (4). 2. To interfere in a harmful or unauthorized manner. For example, to tamper with a delicate mechanism without the proper expertise.

tamper-evident A security feature which makes any **tampering** evident. Used, for instance, to help protect smart cards against fraudulent reprogramming.

tamper-proof Not allowing, or impervious to **tampering**. It is very difficult to attain such a degree of protection.

tamper-resistance 1. The property or characteristic of affording a comparatively high degree of protection against **tampering**. 2. The extent to which something provides **tamper-resistance** (1).

tamper-resistant That which is characterized by **tamper-resistance**.

tamper switch A switch that is activated when something is interfered with in a harmful or unauthorized manner. Such a switch, for instance, may activate an alarm to indicate that a security mechanism is being meddled with.

tampering The process of interfering in a harmful or unauthorized manner. Said, for instance, of the improper use or alteration of a component, circuit, device, piece of equipment, system, material, or mechanism.

tan Abbreviation of **tangent** (1).

tandem The connection of circuits or devices in a manner that the output of one is the input of the next. Seen, for example in a cascade amplifier. Also called **cascade** (3).

tandem office A central office utilized mainly to connect trunks, as opposed to subscriber lines.

tandem office switch Same as **tandem switch**.

tandem processors Two or more processors utilized or connected together. Used, for instance, to provide fault-tolerance, or for multiprocessing.

tandem switch A central office switch utilized mainly to connect trunks, as opposed to subscriber lines. Also called **tandem office switch**.

tangent 1. For a right triangle, the ratio of the length of the side opposite to an acute angle, to the length of the side adjacent to said acute angle. It is the same as the ratio of the sine to the cosine. Its abbreviation is **tan**. 2. A line, curve, or plane which touches another curve or surface at a single point, but does not intersect it.

tangent galvanometer A galvanometer whose readings are proportional to the tangent of the angle of deflection of a needle from its position when no current is present.

tangential mode The reflection of sound waves off four of the six surfaces of a room.

tank 1. Same as **tank circuit**. 2. An acoustic delay line, such as a mercury delay line, which uses a recirculating fluid as the transmission medium. 3. A capsule or container which holds a liquid. For example, that holding a pool of mercury in a mercury switch. 4. A large container or reservoir for storing or holding fluids.

tank circuit Also called **tank** (1). 1. A resonant circuit in which a capacitor and an inductor are connected in parallel with an AC source. Resonance occurs at or near the maximum impedance of the circuit. Also called **antiresonance circuit**, or **parallel-resonant circuit**. 2. A circuit, such as a **tank circuit** (1), which serves to store energy. 3. A **tank circuit** (2) which stores energy over a band of frequencies distributed around the resonant frequency.

tantalum A blue-gray hard metallic chemical element whose atomic number is 73. It has over 30 known isotopes, of which one is stable. It is more corrosion-resistant than platinum, it is very ductile, and can be drawn into very thin wires. Its applications in electronics include its use in semiconductors, lasers, analytical instruments, capacitors, vacuum tubes, and in alloys which provide very high corrosion resistance, ductility, and strength. Its chemical symbol is **Ta**.

tantalum capacitor An electrolytic capacitor in which the anode is composed of a tantalum foil, bar, or slug. Also called **tantalum electrolytic capacitor**.

tantalum carbide A crystalline solid nearly as hard as diamond, and whose chemical formula is **TaC**. It is used in electrodes, and objects requiring extreme resistance to corrosion and high strength, such as certain cutting tools.

tantalum chip capacitor A tantalum capacitor constructed in chip form. These are very small, and are used, for instance, in hybrid ICs.

tantalum electrolytic capacitor Same as **tantalum capacitor**.

tantalum oxide A white crystalline solid whose chemical formula is **Ta₂O₅**. It is used in lasers, semiconductors, optics, capacitors, and as a dielectric. Also called **tantalum pentoxide**.

tantalum pentoxide Same as **tantalum oxide**.

tap 1. A connection made to a component, circuit, bus, or the like, at a point other than an end. Also, to make such a connection. 2. A **tap** (1) utilized to connect a node to a network. 3. A device that cuts internal threads, such as those of a screw. Also, to make such cuts. 4. A concealed device which serves to surreptitiously intercept a communication, especially a telephonic conversation. Also called **wiretap** (1). 5. To install a **tap** (4), or make such a connection. Also