

# WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY

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- circle** A curve, all of whose contained points are equidistant from a fixed point located at the center of said points. Also, that which is in this shape.
- circle diagram** 1. A diagram showing graphical solutions of equations for a transmission line. 2. A diagram showing certain properties, such as impedance, of AC machines.
- circuit** Its abbreviation is *ckt*. 1. One or more conducting paths which serve to interconnect electrical elements, in order to perform a desired function such as amplification or filtering. Also known as **electric circuit** (1). 2. One or more complete paths through which electrons may circulate. Also known as **electric circuit** (2). 3. A medium through which information is conveyed between two or more locations. Such a circuit may be linked physically or wirelessly. Also called **channel** (2), **communications circuit**, **communications channel**, or **communications line**.
- circuit analyzer** An instrument which measures and indicates one or more quantities in an electric circuit, such as resistance or voltage. For instance, an oscilloscope or an ohmmeter. When the instrument measures two or more quantities it is also called **multimeter**, or **multifunction meter**.
- circuit board** A flat, rigid, and insulated panel upon which electrical components are mounted and connected via conductive paths. Used extensively in computers, where the main board is called the motherboard, and secondary boards are called expansion boards. Also called **circuit card**, **card** (2), or **board** (1).
- circuit breaker** A device which automatically opens a circuit under specified conditions, such as a current exceeding a set amount. If it resets itself after another condition is met, such as the passing of a given time period, then it is an **automatic circuit breaker**. Its abbreviation is *CB*.
- circuit-breaker panel** A panel or box which houses a set of **circuit breakers**.
- circuit capacity** 1. The maximum quantity, such as that of current, that can be handled by an electric circuit. 2. The maximum quantity of communication channels that a communications circuit can handle simultaneously.
- circuit card** Same as **circuit board**.
- circuit component** Any of the electrical elements that are a part of a circuit. These may include resistors, capacitors, transistors, generators, electron tubes, and so on. Each component has terminals which allow it to be connected to the conducting path. Also called **circuit element**, **component** (2), **element** (2), **electrical element**, **electrical component**, or **part** (3).
- circuit continuity** The condition in which a circuit has a continuous and complete path for the flow of current. Also called **continuity** (2).
- circuit design** The specifying of the electrical elements, and the manner in which they interconnect with each other, in the formation of a circuit which performs a desired function. Also called **design** (2).
- circuit diagram** A graphical representation of the electrical elements in a circuit, and the way each is interconnected with each other. Each circuit element is represented by a symbol, while lines represent the wiring. Also called **circuit schematic**, **schematic diagram**, **wiring diagram**, **schematic circuit diagram**, **wiring schematic**, or **diagram** (3).
- circuit efficiency** The ratio of the useful output power of a circuit, to the input power.
- circuit element** Same as **circuit component**.
- circuit grade** 1. A designation which indicates the information-carrying capability of a communications circuit. For instance, voice grade, or broadband. 2. A designation which indicates the information-carrying capability of a communications circuit in terms of transmission speed. For instance, data transmissions at speeds up to 100 Mbps.
- circuit layout** Same as **circuitry** (2).
- circuit loading** 1. The power being drawn from a circuit by a measuring instrument. This must be accounted for in order to have an accurate indicated value. 2. The power being drawn from a circuit.
- circuit noise** Noise generated in circuits, in addition to that present in the applied signal. Circuit noise is produced, for instance, by the movement of particles, especially electrons.
- circuit-noise level** At any point within a communications circuit, the ratio of the circuit noise to a chosen reference level. Usually expressed in decibels, or adjusted decibels.
- circuit-noise meter** An instrument which measures **circuit-noise levels**.
- circuit parameter** A specific value for a circuit component, such as the resistance of a resistor, or the capacitance of a capacitor, in a given circuit configuration. Also called **parameter** (2).
- circuit protection** Protective measures, such as fuses, which safeguard a circuit from overloading, excessive heat, corrosion, and so on.
- circuit reliability** The proportion of time that a circuit is available for use while meeting the standards established for it. Usually expressed as a percentage.
- circuit response** 1. A change in the behavior, operation, or function of a circuit as a consequence of a change in its external or internal environment. For example, a change in its output resulting from a change in its input. 2. A quantified **circuit response** (1), such as a frequency response.
- circuit schematic** Same as **circuit diagram**.
- circuit simplification** The designing of circuits so that the desired function is performed utilizing the least electrical elements, and the simplest wiring possible.
- circuit simulation** The use of computers to simulate the behavior of circuits before even a prototype is prepared. Computer-aided design may be used for this.
- circuit-switched data** An ISDN option which enables a bearer channel to transmit digital data over a dedicated connection. Its abbreviation is *CSD*.
- circuit-switched voice** An ISDN option which enables a bearer channel to provide a digital transmission of a voice communication over a dedicated connection. Its abbreviation is *CSV*.
- circuit switching** Also known as **line switching**. 1. The temporary linking of two communications terminals in order to establish a communications channel. This circuit must be established before communication can occur, and remains in exclusive use by these terminals until the connection is terminated. Used, for instance, by telephone companies to enable dial-up voice conversations. Such a connection is made at a switching center. 2. The temporary linking of two data terminals, in a manner that the connection remains in exclusive use by these terminals until the connection is terminated.
- circuit test** A test performed to ascertain the performance of a circuit. For instance, a test of continuity.
- circuit tester** An instrument which tests the performance of a circuit. For instance, a continuity tester.
- circuit testing** 1. A series of tests intended to ascertain the performance of a circuit. 2. The performing of a test to ascertain the performance of a circuit.
- circuit theory** The mathematic analysis of electric circuits, and the relationships between the components such circuits contain. Also called **electric circuit theory**.
- circuitron** A collection of active and passive electronic components mounted inside the same enclosure, and functioning as one or more complete operating stages.

**decibels referred to 1 watt** Same as **dBW**.

**decimal** 1. Based on, or consisting of ten parts, components, or possibilities. 2. Same as **decimal number system**. 3. Same as **decimal number**.

**decimal attenuator** An attenuator which reduces the amplitude of a signal in decimal steps. That is, in successive powers of 10.

**decimal code** A code composed of elements which can have one of 10 states or values, namely 0 to 9. The decimal number system is an example of such a code.

**decimal-coded digit** A decimal digit expressed by a given pattern of zeroes and ones.

**decimal digit** A digit whose value may be 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9.

**decimal notation** The utilization of decimal digits to express numerical values.

**decimal number** A number expressed utilizing the **decimal number system**. Also called **decimal** (3).

**decimal number system** A numbering system whose base is 10, meaning that there are 10 digits in this system, specifically 0 to 9. All digits to the left of the decimal point represent successive positive powers of 10, while those to the right of the decimal point are successive negative powers of 10. For example,  $456.789 = (4 \times 10^2) + (5 \times 10^1) + (6 \times 10^0) + (7 \times 10^{-1}) + (8 \times 10^{-2}) + (9 \times 10^{-3})$ . Also called **decimal** (2), or **decimal system** (2).

**decimal point** The point, within a decimal number, which indicates what power of ten a digit is.

**decimal system** 1. A system whose components can have one of 10 states or values. 2. Same as **decimal number system**.

**decimal-to-binary conversion** The conversion of a decimal representation into a binary representation. For example, converting a decimal, or base 10, number into a binary, or base 2, number.

**decimeter** A unit of distance equal to 0.1 meter. Its abbreviation is **dm**.

**decimetric waves** Electromagnetic waves whose wavelength is within the range of 0.1 to 1 meter, corresponding to frequencies of between 3000 to 300 MHz, respectively. This represents the ultra-high frequency band.

**decipher** Same as **decode** (1).

**decision** In computers, the determination of a choice or course of action to be taken, based on the particular circumstances and available alternatives. For instance, a computer may compare one set of data to another, to effectuate such a decision. Also called **logical decision** (1).

**decision box** A symbol, usually in the form of a diamond, which indicates a point within a flowchart where decision must be made. The result of the decision determines which branch will then be followed.

**decision circuit** Same as **decision element**.

**decision element** A circuit which performs logic operations, such as AND or NOT on its input, and whose output is a signal which indicates the result of the operation. Also called **decision circuit**.

**decision support software** Software utilized within a **decision support system**.

**decision support system** An analysis and decision-making system which incorporates programs and databases designed to work as a unit. One of the key features of such a system is the ability to help analyze various possible outcomes of any number of decisions, before any concrete actions take place. Its abbreviation is **DSS**.

**decision table** A **decision tree** in table form.

**decision tree** A diagram in which the possible outcomes of a problem, with sequential alternatives, are represented as branches. As each decision is made, two or more branches,

representing the next choices, become available. This continues until a conclusion is reached.

**deck** Abbreviation of **tape deck**. 1. An audio system component which records and plays back magnetic tapes. 2. The tape-transport mechanism of a **deck** (1).

**declination** For a given geographic location, the angle representing the difference between magnetic north and true north. Also called **magnetic declination**.

**declination angle** The angle below a reference plane, such as the horizon, of a descending line. Also called **angle of declination**.

**declinometer** An instrument used for measuring **declination**.

**decode** 1. To unscramble information, such as data, with the use of a key. For instance, to convert ciphertext into plaintext. Also called **decipher**, or **decrypt**. 2. To convert encoded data back into its original form. For instance, to convert text back to its original form after it has been expressed in ASCII code.

**decoder** 1. A circuit, device, or program which converts that which has been encoded back into its original form. 2. In a TV receiver, a circuit or device which transforms the color-difference signals into separate red, green, and blue signals. Also called **color decoder**, or **matrix** (4). 3. A circuit or device which produces one or more outputs, based on the combination of its input signals. 4. A circuit which responds to a given coded signal, while rejecting all others. 5. Same as **decoder box**.

**decoder box** A device, that connects to a TV, which decodes an incoming signal or otherwise enables viewing of certain channels, programming, or content. Such a device may serve to permit viewing of satellite or cable programming, HDTV signals, close-captions, and so on. A decoder box may also connect to another device, such as a VCR. Also called **decoder** (5).

**decoder circuit** A circuit which serves as a **decoder**. Also called **decoding circuit**.

**decoder/demultiplexer** A circuit or device which accepts multiple inputs, and which provides one of several mutually exclusive outputs. The output will depend on the combination of input signals.

**decoding** The actions a **decoder** performs.

**decoding circuit** Same as **decoder circuit**.

**decollimate** To convert a beam which is parallel, or nearly parallel, into one which is convergent or divergent.

**decollimation** The conversion of a beam which is parallel, or nearly parallel, into one which is convergent or divergent, through processes such as diffraction or scattering. Used, for instance, in optical communications.

**decommutation** The extraction of one or more signals from a composite signal formed through commutation.

**decommutator** A device, such as a multiplexer, which extracts commutated signals.

**decompiler** A computer program which attempts to convert machine language back into a high-level source language. It is not always possible to make a completely accurate translation, as some machine code does not have an exact high-level source language equivalent.

**decompress** The undoing of the effects of compression. That is, to restore data to its original size and/or bandwidth. Also called **uncompress**.

**deconvolution** The processing of an image or signal to exclude undesired components, such as noise, or to restore it to its original form. Such techniques usually involve the use of Fourier transforms.

**decoupling** The substantial reduction, or elimination of coupling. Decoupling may be utilized, for instance, between the stages of an amplifier to avoid interstage coupling.

- megabyte**  $2^{20}$ , or 1,048,576 bytes, although this is frequently rounded to a million. To avoid any confusion, the term **mebibyte** may be used when referring to this concept. Its abbreviation is **MB**, or **Mbyte**.
- megabytes per second**  $2^{20}$ , or 1,048,576 bytes, per second. Usually used as a measure of data-transfer speed. To avoid any confusion, the term **mebibytes per second** may be used when referring to this concept. Its abbreviation is **MBps**.
- megacoulomb** A unit of electric charge equal to  $10^6$ , or 1,000,000 coulombs. Its abbreviation is **MC**.
- megacurie** A unit of radioactivity equal to  $10^6$ , or 1,000,000 curies. Its abbreviation is **MCI**.
- megacycle** A unit of frequency equal to  $10^6$ , or 1,000,000 cycles, or  $10^6$  or 1,000,000 Hz. The term currently used for this concept is **megahertz**. Its abbreviation is **Mc**.
- megaelectronvolt** Same as **mega-electron volt**.
- megaflops** Same as **MFLOPS**.
- megagauss** A unit of magnetic flux density, or magnetic induction, equal to  $10^6$ , or 1,000,000 gauss. Its symbol is **MGs**, or **MG**.
- megagram** A unit of mass equal to  $10^6$ , or 1,000,000 grams, or 1,000 kilograms, or one tonne. Its abbreviation is **Mg**.
- megahertz** A unit of frequency equal to  $10^6$ , or 1,000,000 Hz. Its abbreviation is **MHz**. Also called **megacycle**.
- megajoule** A unit of energy or work equal to  $10^6$ , or 1,000,000 joules. Its abbreviation is **MJ**.
- megalumen** A unit of luminous flux equal to  $10^6$ , or 1,000,000 lumens. Its abbreviation is **Mlm**.
- megameter** A unit of distance equal to  $10^6$ , or 1,000,000 meters. Its abbreviation is **Mm**.
- megampere** A unit of current equal to  $10^6$ , or 1,000,000 amperes. Its abbreviation is **MA**.
- megaohm** Same as **megohm**.
- megapascal** A unit of pressure equal to  $10^6$ , or 1,000,000 pascals. Its abbreviation is **MPa**.
- megaphone** A handheld device, usually in the shape of a funnel, which is used to amplify and direct sounds, usually a voice. Such a unit incorporates a microphone, amplifier, and a speaker, and may have additional features such as an alarm siren signal.
- megapixel** 1. 1,048,576 pixels, although this amount is usually rounded to 1,000,000 pixels. Generally used to describe the resolution of a graphics device, such as a monitor or digital camera. An example is a screen which is has 1,024 horizontal pixels by 1,024 vertical pixels. 2. Over a million pixels. Usually used to describe the resolution of a graphics device, such as a monitor or digital camera.
- megapixel display** A display, such as that of a monitor or digital camera, with at least one million displayed pixels.
- megatron** An ultra-high frequency electron tube with parallel disk-shaped electrodes, which features low interelectrode capacitance and a high-power output. Also called **disk-seal tube**, or **lighthouse tube**.
- megavar** A unit of reactive electric power equal to  $10^6$ , or 1,000,000 vars. Its abbreviation is **Mvar**. Also called **megavolt-ampere reactive**.
- megavar-hour** A unit of reactive electric energy equal to  $10^6$ , or 1,000,000 var-hours. Its abbreviation is **Mvarh**.
- megavolt** A unit of potential difference equal to  $10^6$ , or 1,000,000 volts. Its abbreviation is **MV**.
- megavolt-ampere** A unit of apparent power or true power equal to  $10^6$ , or 1,000,000 volt-amperes. Its abbreviation is **MVA**.
- megavolt-ampere reactive** Same as **megavar**.
- megavoltmeter** A voltmeter whose indications are expressed in megavolts.
- megawatt** A unit of power equal to  $10^6$ , or 1,000,000 watts. Its abbreviation is **MW**.
- megawatt-hour** A unit of energy equal to  $10^6$ , or 1,000,000 watt-hours. Its abbreviation is **MWh**, or **MWhr**.
- megger** 1. A portable instrument which is powered by a hand-driven generator, and that is utilized to measure resistance values. It has a wide useful range, provides readings in megohms, and is used, for instance, for measuring insulation resistance, or for continuity tests. 2. Same as **megohmmeter**.
- megohm** A unit of resistance, impedance, or reactance equal to  $10^6$ , or 1,000,000 ohms. Its proper abbreviation is **MΩ**, although **M** is also used. Also spelled **megaohm**.
- megohmmeter** An ohmmeter whose readings are in megohms. Also called **megger** (2).
- Meissner effect** For a material in a superconducting state, the active exclusion of an external magnetic field from penetrating its interior. Under such conditions a superconducting material reflects a magnetic field, and this property may be used to induce magnetic levitation. If a magnetic field of sufficient strength is applied, it penetrates the interior of the material, and the superconductivity is terminated.
- meitnerium** A synthetic radioactive chemical element whose atomic number is 108, and which has about three identified isotopes. The techniques employed to produce this element are utilized to help discover new elements with higher atomic numbers. Its chemical symbol is **Mt**.
- mel** A subjective unit of relative pitch. A pure tone whose frequency is 1000 Hz at 40 dB above a given listener's hearing threshold is defined to be 1000 mels. A pitch judged by the same listener as twice as high is 2000 mels, half as high as 500 mels, and so on.
- mel frequency cepstral coefficient** Its abbreviation is **MFCC**. A technique, often utilized in voice-recognition systems, which takes into account the subjective manner in which each person's auditory system perceives sound, by a using **mel**-based frequency scale. **MFCC** may also be used, for instance, to better model music signals.
- meltdown** 1. A complete halt of a computer system or network. May be caused, for instance, by a program deficiency, a hardware failure, or network congestion. 2. The complete halt of a communications network. The term usually entails a condition of excess traffic, although such an occurrence may also be caused by hardware or software. Also called **network meltdown**.
- melting point** Its abbreviation is **mp**. Also called **melting temperature**. 1. The temperature at which a liquid and a solid of the same substance are at equilibrium with each other. Each pure substance has a specific melting point, for a given surrounding pressure. For example, at a pressure of 1 atmosphere, the melting point of water is 0 °C. Also called **freezing point** (1). 2. The temperature at which a solid substance being heated begins to liquefy.
- melting range** For a mixture, such as an alloy, the temperature interval spanning from the solidus temperature to the liquidus temperature.
- melting temperature** Same as **melting point**.
- membrane keyboard** A computer keyboard in which pressure-sensitive keys are pressed through a plastic or rubber sheet which covers all keys. Usually used in environments where dust, grease, or other contaminants might otherwise enter and harm the inner keyboard components.
- membrane keypad** A keypad in which pressure-sensitive keys are pressed through a plastic or rubber sheet which covers all keys. Often used in environments where dust, grease, or other contaminants might otherwise enter and harm the inner keypad components.
- memory** The locations within a computer that serve for temporarily holding and accessing data in a machine-readable

format. Memory chips are used for this purpose, and most are allocated for RAM, or main memory. Memory is usually quantified in multiples of bytes. For example, a computer with 1 gigabyte of RAM can hold approximately 1 billion bytes, or characters, of information, and this is the total temporary workspace this computer has available. Other forms of memory in a computer include ROM, PROM, and EPROM. Although **memory** and **storage** are sometimes used synonymously, **storage** refers to a more permanent form of holding and accessing data, using magnetic or optical media, such as disks and tapes. Also called **computer memory**, or **system memory** (1).

**memory access speed** Same as **memory access time**.

**memory access time** The time that elapses between a request for data and its delivery. For example, the time necessary to exchange information between the CPU and a hard disk. Also called **memory access speed**, or **access time** (1).

**memory address** A number which indicates the specific place where data is stored within the memory of a computer.

**memory address register** Its abbreviation is **MAR**. 1. The register that contains the addresses of the location in memory currently being accessed. 2. A register that stores an address. Also called **address register** (2).

**memory address space** The amount of memory a CPU can access. It is determined by the size of the address bus. Also called **address space** (1).

**memory allocation** The reserving of computer memory for specific purposes. For instance, a running program sets aside a given amount of RAM for certain functions.

**memory bank** Any given physical location, such as a memory module, that holds data in memory.

**memory-based reasoning** In a database, a technique utilized for classifying records by comparing them to records that have already been classified. Its abbreviation is **MBR**.

**memory board** A circuit board containing computer memory. Such a board incorporates one or more memory chips.

**memory buffer register** A register utilized to temporarily store information that awaits to be written to, or read from, memory. Also called **memory data register**. Its abbreviation is **MBR**.

**memory cache** Also called **cache**, or **cache memory**. 1. In computer memory management, a specialized high-speed storage subsystem. Cache works by storing recently and/or frequently accessed information, where it can be accessed much faster than from where it was obtained. A level 1 cache is built right into the CPU, while a level 2 cache utilizes a memory bank between the CPU and main memory. Level 1 cache is faster, but smaller than level 2 cache, while level 2 cache is still faster than main memory. Disk cache uses a section of main memory to store recently accessed data from a disk, and can dramatically speed up applications by avoiding the much slower disk accesses. One way to measure the effectiveness of a cache is the hit rate, which indicates which proportion of data accesses are fulfilled by it, instead of main memory or a disk. 2. An area of computer memory where the most recently downloaded Web pages may be temporarily stored, so that when one of these pages is returned to, it loads faster. Also called **browser cache**.

**memory capacity** 1. The amount of data a computer can store in memory. Usually expressed in multiples of bytes, such as gigabytes or terabytes. 2. The amount of data that can be placed in a storage medium. Usually expressed in multiples of bytes, such as gigabytes or terabytes. Also called **storage capacity** (1).

**memory card** 1. An expansion card containing computer memory. Examples include flash cards, IC cards, and RAM cards. 2. A card or module containing RAM chips. These are utilized to expand the RAM available to a computer. A

memory card may also incorporate a battery to keep the memory cells charged. Also called **RAM card**.

**memory cartridge** A plug-in cartridge containing computer memory. Such a cartridge incorporates one or more memory chips, and may be seen, for instance, in printers and portable or handheld computing devices such as notebooks or PDAs.

**memory cell** A component or circuit which stores one bit of data. It may consist, for instance, of a single transistor.

**memory chip** A chip which consists of memory cells and the associated circuits necessary, such as those for addressing, to provide a computer, or other device with memory or storage. Examples include RAM, SRAM, ROM, EEPROM, and flash-memory chips. Also called **memory IC**, **IC memory**, or **chip memory**.

**memory compression** The encoding of data so that it occupies less memory space.

**memory cycle** An operation in which data is retrieved from memory, or placed in memory, or retrieved, modified, and placed in memory, and so on.

**memory cycle time** The time required for the completion of a full memory cycle.

**memory data register** Same as **memory buffer register**. Its abbreviation is **MDR**.

**memory dialing** A telephone feature which allows placing a call by accessing a previously stored number. Such a feature is used, for instance, by pressing a button, entering a short key sequence, by pressing a key for longer than a specified time, and so on. Also called **speed dialing**.

**memory dump** To display, print, copy, or transfer the content of the main memory of a computer. Such a dump may be performed after a process which ends abnormally, for instance, to help pinpoint the source of a problem. A memory dump may also be generated automatically. Also called **core dump**, **dump** (2), or **storage dump** (2).

**memory effect** A property of some batteries, especially nickel-cadmium, in which battery life is gradually diminished when recharged before becoming completely discharged. This effect can be minimized by periodically completely draining said batteries.

**memory IC** Same as **memory chip**. Abbreviation of **memory integrated circuit**.

**memory integrated circuit** Same as **memory chip**. Its abbreviation is **memory IC**.

**memory interleaving** The use of multiple banks of memory to increase the speed at which data is read and written. For example, a CPU may stagger memory read/writes between two banks of RAM, and perform a write without having to wait for the read to be completed.

**memory leak** The failure to recover memory which has been allocated to an application, routine, or process which no longer needs it. Unless such memory is properly deallocated, all available memory will eventually be drained. Also, the resulting condition.

**memory location** 1. Any place in memory where data may be stored. 2. A specific place where data is stored within the memory of a computer, peripheral, or disk.

**memory management** The techniques and operations utilized to help optimize the use of a computer's memory. These include freeing memory when no longer used by a program, handling virtual memory, paging, and swapping, and are usually performed automatically by the operating system. Also called **memory management system**.

**memory management system** Same as **memory management**.

**memory management unit** A hardware component that performs **memory management**, especially that related to

**realtime video conferencing** Same as **real-time video conferencing**.

**RealVideo** A popular format for streaming video.

**Réaumur scale** Same as **Réaumur temperature scale**.

**Réaumur temperature scale** An obsolete temperature scale in which water freezes at 0 degrees and boils at 80 degrees. Also called **Réaumur scale**.

**rear projection** The projection, onto a translucent screen, of images sent from a separate unit, and in which the projector and any viewers are on opposite sides of said screen. Used, for instance, in rear-projection TVs. This contrasts with **front projection**, where the images are viewed on a non-translucent screen, and the projector and viewers are on the same side of said screen.

**rear-projection television** Same as **rear projection TV**.

**rear projection TV** Abbreviation of **rear-projection television**. A TV with **rear projection**.

**rear-surface mirror** A mirror whose reflective coating is on its rear surface, as is the case with a household mirror. This contrasts with **front-surface mirror**, in which the reflective coating is on the front surface. Also called **second-surface mirror**, or **back-surface mirror**.

**rear wave** An acoustic wave which is radiated by the back of a loudspeaker, which can cancel the waves radiated from the front of the loudspeaker. An infinite baffle completely isolates the back waves from the front waves, while a port helps both waves to be in phase. Also called **back wave**.

**reassembly** In a packet-switched network, the reconstitution of a packet at the receiving end, after **segmentation** at the transmission end. Also spelled **re-assembly**.

**rebecca** In the **rebecca-eureka** system, the airborne interrogator.

**rebecca-eureka** Same as **rebecca-eureka system**.

**rebecca-eureka system** A radar homing system which utilizes an airborne interrogator, called **rebecca**, and a ground transponder beacon, called **eureka**. Also called **rebecca-eureka**.

**reboot** To reset a computer. During this process the computer accesses instructions from its ROM chip, performs self-checks, loads the operating system, and prepares for use by an operator. A rebooting may be initiated by pressing a button or switch, by hitting a specific key sequence, or through a program or routine that gives this command. It is an abbreviation of **rebooting**.

**rebooting** Same as **reboot**.

**rebroadcast** Also spelled **re-broadcast**. 1. To repeat or reemit a broadcast. 2. A broadcast that is repeated or relayed by a station other than that emitting the original broadcast.

**rebuild** Also called **reconstruct**, or **remodel**. 1. To make repairs that are so extensive that it is equivalent to building again. 2. To build again.

**recall** 1. To restore to a former condition. Also, the act of restoring to a former condition. 2. In computers, a retrieval of information. Also, the act of retrieving information. 3. To request that a defective manufactured product be returned for adjustment, repair, or disposal. Also, the process of informing of such a recall, and making the changes. 4. Same as **redial**.

**receipt notification** A confirmation or notification given to a sender that a given email has been received or opened by a recipient.

**received power** 1. The power an antenna receives from a transmitter or other signal source. 2. The power a device receives from a transmitter or other signal source.

**receiver** Its abbreviation is **RX**. 1. A component, device, piece of equipment, or system which accepts information-

bearing signals, and which can extract the meaningful information contained. There are many types of receivers, including those utilized in communications, TV and entertainment, radars, and so on. Signals may arrive from land-based antennas, satellites, remote controls, and so on. 2. A single audio-frequency component which incorporates a preamplifier, a power amplifier, and a tuner. Such a component usually has multiple inputs for CDs, DVD, TVs, tape decks, and so on, and may have circuitry for specialized sound reproduction, such as Dolby surround sound. 3. Same as **radio receiver**. 4. A small loudspeaker located in the handset of a telephone, which enables listening. Also called **earphone** (3), or **telephone receiver** (1). 5. That which is a destination or which otherwise accepts signals, energy, particles, waves, or the like, which move from one point to another.

**receiver bandwidth** 1. The interval of frequencies within which a receiver can produce a given proportion of its maximum output. Usually calculated at 50% or 90% of full power. 2. The interval of frequencies within which the performance of a receiver falls within certain limits.

**receiver muting** In a transceiver or transmitter-receiver, the reduction or silencing of the receiving input while transmitting. This may occur manually or automatically.

**receiver noise** 1. The electrical noise generated by a receiver in the absence of an input signal. 2. Any noise generated by a receiver.

**receiver noise factor** For a specified bandwidth, the ratio of the total noise output to the total noise input for a given receiver. It is the additional noise a receiver adds to any signal it accepts. Usually expressed in decibels, in which case it is called **receiver noise figure**.

**receiver noise figure** The **receiver noise factor** expressed in decibels.

**receiver off-hook** The condition where a telephone is not in use, yet the handset is removed from its cradle. This may occur, for instance, by not hanging up after a call. There is usually a loud warning tone to indicate that this condition exists. Its abbreviation is **ROH**.

**receiver primaries** Colors which are combined in an additive mixture to yield a full range of colors to be displayed by a color TV receiver. Red, green, and blue are most commonly used as the additive primary colors. Also called **display primaries**.

**receiver selectivity** 1. The degree to which a receiver can differentiate between a desired signal and other signals. 2. The degree to which a receiver rejects the signals of channels adjacent to that which is desired. Also called **adjacent-channel selectivity**.

**receiver sensitivity** 1. For a receiver, the minimum input signal level which will produce a discernable output signal. 2. For a receiver, the minimum input signal level which will produce an output signal with a signal-to-noise ratio equal to or greater than a given value.

**receiver set** Same as **radio receiver**.

**receiver synchro** In a synchro system, the synchro which converts the voltage received from the synchro transmitter into the corresponding angular position of its stator. Also called **synchro receiver**.

**receiving antenna** An antenna which picks up electromagnetic radiation. There are many types of receiving antennas, including those utilized in communications, TV and entertainment, radars, and so on. A single antenna may be able to be used for both transmission and reception.

**receiving device** A device, such as a GPS Receiver, a beacon receiver, or a receiving fax, which picks up or receives a signal emitted or sent by a transmitting device utilizing the same system.

- as a receiver, to its full rated output, or to a stated output.  
 2. The minimum input RF signal level which will be detected by a device, such as a receiver.
- RF sensor** Abbreviation of radio-frequency sensor. Same as **RF detector**.
- RF shield** Abbreviation of radio-frequency shield. Also called **radio shield**. 1. Same as **RF shielding** (1). 2. Same as **RF shielding** (2).
- RF shielding** Abbreviation of radio-frequency shielding. Also called **RF screening**, **radio shielding**, or **radio screening**. 1. A material or enclosure which blocks the effects of RF fields. Used, for instance, to help minimize or prevent the effects of external electromagnetic interference. Also called **RF shield** (1), **RF screen** (1), or **radio screen** (1). 2. An **RF shielding** (1) which serves to confine RF fields within an enclosure. Used, for instance, to help minimize or prevent electromagnetic interference which may affect other devices or systems. Also called **RF shield** (2), **RF screen** (2), or **radio screen** (2). 3. The use of an **RF shielding** (1), or **RF shielding** (2).
- RF signal** Abbreviation of radio-frequency signal. A signal whose frequency is within the **radio spectrum**. Also called **radio signal** (2).
- RF signal generator** Abbreviation of radio-frequency signal generator. A circuit or device that generates **RF signals**. Used, for instance, for calibrating and testing.
- RF spectrum** Abbreviation of radio-frequency spectrum. Same as **radio spectrum**.
- RF splitter** Abbreviation of radio-frequency splitter. A device, such as a coaxial splitter, which divides an **RF signal** so that it will travel over multiple paths.
- RF stage** Abbreviation of radio-frequency stage. A stage within a radio device, such as a receiver.
- RF system** Abbreviation of radio-frequency system. Any system, such as a communication system, which utilizes radio waves.
- RF transformer** Abbreviation of radio-frequency transformer. A transformer which works at radio frequencies.
- RF transistor** Abbreviation of radio-frequency transistor. 1. A transistor specifically designed to work optimally at radio frequencies. 2. A transistor that operates at radio frequencies.
- RF transmission** Abbreviation of radio-frequency transmission. The emission of **RF waves** from a radio transmitter, or another radio source.
- RF transmission line** Same as **RF line**.
- RF waves** Abbreviation of radio-frequency waves. Same as **radio waves**.
- RF welding** Abbreviation of radio-frequency welding. Welding in which radio-frequency energy is the source of heat. Used, for instance, to join thermoplastic materials such as **PVC**. Also called **high-frequency welding**.
- RFC** Abbreviation of **RF choke**.
- RFC 1490** A standard for encapsulating **SNA** and **LAN** traffic within a frame relay **WAN** network.
- RFI** Same as **RF interference**.
- RFIC** Abbreviation of radio-frequency integrated circuit. An **IC** designed to work at radio frequencies. Used, for instance, in low-noise amplifiers, power amplifiers, **IF** circuits, frequency synthesizers, and so on.
- RFID** Abbreviation of radio-frequency identification. Also called **dedicated short-range communication**. 1. A technology in which **RF signals** are emitted by an object in response to an interrogator, for purposes of identification, collection of information, or the like. A typical arrangement involves a reader which emits signals which a transponder, or tag, in the object responds to. The reader, which processes the obtained information, and tag need not be in nearly direct contact, as is required, for instance, in a bar-code system. Also called **RFID technology**. 2. A system using **RFID technology**. Such a system may be utilized, for example, to identify store items being purchased or placed into inventory, to drive through a toll station having the appropriate amount automatically deducted from a smart card attached to the windshield, for the location, complete with proper placement instructions, of parts within a robotic assembly line, or for tracking the movements of people being spied on by attaching such devices on clothing, objects being carried, or via the surgical insertion or embedding of such transceivers. Higher-frequencies, greater transmission power, and enhanced antenna designs, for instance, may be utilized to extend the range of such systems. Also called **RFID system**.
- RFID interrogator** Same as **RFID reader**.
- RFID reader** In an **RFID system**, a device which sends an interrogating signal which is responded to by an **RFID tag**. Also called **RFID interrogator**.
- RFID system** Same as **RFID** (2).
- RFID tag** A transponder within an **RFID system**. Such a transponder is usually in the form of an **IC**, and responds to interrogating signals arriving from an **RFID reader**. Such a tag, for instance, may be incorporated into a box label, a smart card, or a key chain wand which is waved near a reader to effect payments. Also called **RFID transponder**, or tag (4).
- RFID technology** Same as **RFID** (1).
- RFID transponder** Same as **RFID tag**.
- RG-6** A type of coaxial cable that is rated at 75 ohms, and which is used, for instance, for satellite dish cabling.
- RG-8** A type of coaxial cable that is rated at 50 ohms, and which is used, for instance, for cable TV.
- RG-11** A type of coaxial cable that is rated at 75 ohms, and which is used, for instance, for long cable runs between an antenna and TV receivers.
- RG-58** A type of coaxial cable that is rated at 50 ohms, and which is used, for instance, for LANs.
- RG-59** A type of coaxial cable that is rated at 75 ohms, and which is used, for instance, for broadband cable.
- RG-62** A type of coaxial cable that is rated at 93 ohms, and which is used, for instance, for LANs.
- RGB** Abbreviation of red-green-blue. A color model used for displaying in which any color is formed through the appropriate mixture of red, green, and blue.
- RGB display** Same as **RGB monitor**. Abbreviation of red-green-blue display.
- RGB monitor** Abbreviation of red-green-blue monitor. A monitor which utilizes three electron guns, one each for red, green, and blue, to represent all displayed colors. Such a monitor accepts separate red, green, and blue signals. Widely utilized as TV and computer displays. Also called **RGB display**.
- RGB signal** Abbreviation of red-green-blue signal. Each of the three signals which control the red, blue, and green electron guns of an **RGB monitor** respectively. Also, the three signal considered together.
- RGB system** Abbreviation of red-green-blue system. A display system utilizing **RGB signals**.
- RGB video** Abbreviation of red-green-blue video. Video utilizing **RGB signals**.
- Rh** Chemical symbol for **rhodium**.
- RH** Abbreviation of **relative humidity**.
- RHEED** Abbreviation of **reflection high-energy electron diffraction**.

## tracking generator

**tracking generator** An instrument which can manipulate a signal, so as to change its otherwise linear or sinusoidal waveform, into one that tracks another given shape, such as that of an oscillator which produces square or sawtooth waves, while maintaining the sweeps synchronized.

**tracking mode** An operational mode in which a component, circuit, device, piece of equipment, system, or mechanism follows the actions, movements, variations, or the like of something else, while making corresponding adjustments.

**trackpad** Same as **touchpad**.

**tracks per inch** A measure of the density of the tracks (3) on a disk or tape. Some disks, for instance, have hundreds of thousands of tracks per inch of surface. Its abbreviation is TPI, or tpi.

**TRACON** Acronym for **terminal radar approach control**.

**tractor feed** A method or mechanism for moving papers, or other appropriate mediums, through a printer by using pins which are mounted on wheels on each side of the printer. The medium being utilized must have holes which match the pins. This contrasts with a **friction feed**, in which the medium is advanced while pinched between rollers.

**traffic** 1. The volume of users, messages, transmissions, or the like present within a communications network at a given moment. This may refer to telephone calls connected, data being downloaded, emails being received, faxes being sent, and so on. 2. The volume of data being transmitted over a communications network at a given moment. 3. The volume of users utilizing a communications network at a given moment. 4. The volume of users accessing a Web site at a given moment. 5. The **traffic (1)**, **traffic (2)**, **traffic (3)**, or **traffic (4)**, for a stated time period, such as a second, minute, hour, day, month, year, and so on.

**traffic intensity** A measure, such as that taken during peak hours, which indicates the level of usage a communications network is capable of. It may consist, for example, of a determination of the number of connections that can be reliably maintained simultaneously.

**traffic management** The measures taken to monitor and control the traffic of a communications network. Used, for example, to avoid situations of excessive congestion. Widely utilized, for instance, in ATM. Also called **network traffic management**.

**trailer** 1. A section of nonmagnetic tape, usually plastic, which is affixed to the end of a length of recording tape. A section attached at the beginning of a tape is called a **leader** (1). 2. In communications, the last part of a message, packet, or the like. Such a trailer, for instance, may incorporate error-checking data.

**trailer label** 1. A label, such as that consisting of a block, identifying the last record within a file, such as that stored on a tape. 2. A label identifying the last data unit, or the end of a transmission of data. For example, an end-of-data mark.

**trailing antenna** An antenna which hangs from the rear of an aircraft. Formerly utilized to extend the range of communications to and from aircraft so equipped.

**trailing edge** Also called **tail** (3). 1. The portion of a pulse waveform which first decreases in amplitude. That is, the falling portion. The portion which first increases is the **leading edge** (1). 2. The latter portion of a pulse or signal. The initial part is called **leading edge** (2).

**train** A comparatively long line or sequence, such as a pulse train, or a large succession of events, components, or the like.

**trans** 1. Abbreviation of **transaction**. 2. Abbreviation of **transverse**.

**transaction** Its abbreviation is **trans**. An event or activity in which something is exchanged between two entities, or

which elicits a corresponding action. For example, a command which calls for a processing action, an exchange between a user and an interactive system, a change in a record which updates a master file, or an online or point-of-sale purchase.

**transaction file** A file containing **transaction records**. Also called **change file**.

**transaction monitor** Same as **TP monitor**.

**transaction processing** The processing of transactions the instant each is received by, or entered into, a computer system. Online transaction processing not only maintains all master files constantly current, it also enables entering or retrieving information without delays in either process. Used, for instance in mail order businesses which have multiple locations which accept Internet, telephone, and fax orders. Also called **online transaction processing**, or **real-time transaction processing**.

**transaction processing monitor** Same as **TP monitor**.

**transaction record** In a computer database, a record which changes information in the corresponding master file. Also called **change record**.

**Transaction Tracking System** A system that protects data by undoing incomplete transactions due to software and/or hardware failures. When a transaction is undone, data is returned to its previous state. Its abbreviation is **TTS**.

**transactions per minute** A performance measure which indicates the number of transactions, such as those a database server can perform, per minute. Its abbreviation is **TPM**.

**transactions per second** A performance measure which indicates the number of transactions, such as those a database server can perform, per second. Its abbreviation is **TPM**.

**transadmittance** In a circuit or device, the ratio of the output current to the input voltage, when one or both values may have an imaginary number component.

**transceiver** Acronym for **transmitter-receiver**. 1. A unit which combines a radio transmitter and a receiver in the same housing, usually sharing certain circuits and components. 2. A device which combines the functions of transmitter and a receiver. For example, that which enables a computer to both transmit and receive signals to and from a communications network. 3. A device which both transmits and receives, as opposed to just performing either function. For example, a two-way pager.

**transcendental number** A number, such as  $\pi$  or  $e$ , which is not the root of a polynomial equation with integer coefficients.

**transcode** To convert from one code or format to another. For example, to convert analog music into digitally encoded music, or to change from one digital music format to another.

**transconductance** Also called **mutual conductance**. 1. For an amplifying device, such as a transistor or an electron tube, the ratio of the change in output current to the change in input current. For example, in a tube, it is the ratio of the change in plate current to the change in grid voltage, with the plate voltage held constant. Usually expressed in multiples of siemens or mhos. 2. For a component, circuit, or device, the ratio of the output current to the input current.

**transconductance amplifier** Also called **operational transconductance amplifier**. 1. An amplifier which converts its input voltage into an output current proportional to said voltage. 2. A differential amplifier which converts the difference between its input voltages into an output current proportional to said difference.

**transcribe** 1. To copy or transfer data from one medium or another, performing the necessary conversions, such as those involving formatting, to the new medium. 2. To re-

- usually high-purity gold. 2. The joining of two wires or cables without soldering.
- wire center** A structure which houses one or more central offices.
- wire communications** A mode of transmission and/or reception of information, such as voice, video, data, or control signals, in which there are connecting wires or cables, as opposed to **wireless communications**.
- wire control** Remote control which utilizes connecting wires or cables, as opposed to the use of radio, infrared, or acoustic waves. Also called **wire remote control**.
- wire drawing** In wire manufacturing, the pulling of a metal through one or more dies to reduce its diameter to the desired value. Also spelled **wiredrawing**. Also called **drawing**.
- wire duct** A pipe, tube, or channel through which wires are run.
- wire frame model** Same as **wireframe model**.
- wire frame modeling** Same as **wireframe modeling**.
- wire fuse** A fuse, such as a link fuse, in which the melting conductor is a wire. This contrasts, for instance, with a strip fuse.
- wire fusing current** The level of current at which a given wire will melt. Also called **fusing current**.
- wire gage** Same as **wire gauge**.
- wire gauge** Also spelled **wire gage**. 1. A scale or standard, such as Birmingham Wire Gauge, utilized for determining the diameter of wires. Also, a measurement expressed in such terms. For example, a 14-gauge wire. It is common for such scales or standards to also be utilized for determining thicknesses and diameters of tubing, sheets, rods, and the like. 2. A device or instrument utilized to determine the gauge of a given wire. It is common for such a device or instrument to also be able to be used to determine thicknesses and diameters of tubing, sheets, rods, and the like.
- wire harness** A bundle of wires which is tied or otherwise attached together so as to be handled, installed, or removed as a unit.
- wire leads** Leads that consist of wires, as opposed, for instance, to strips, posts, or bars.
- wire line** A transmission line utilized for **wire communications**. Also called **wire link**.
- wire link** Same as **wire line**.
- wire-link telemetry** Telemetry in which signals are sent via wires and/or cables, as opposed to being sent over radio. Also called **hard-wire telemetry**.
- wire pair** A transmission line consisting of two similar conductors. For example, a two-wire circuit, or a two-wire telephone line. Also called **pair** (3).
- wire rate** Same as **wire speed**.
- wire recording** An obsolete magnetic recording system in which audio or data is recorded upon a thin wire.
- wire remote control** Same as **wire control**.
- wire speed** In communications, the rate at which the hardware, such as switches and routers, and physical mediums, such as wires and cables, can transfer data across a network. When software, such as that performing encryption and decryption, works at the same rate as the hardware and physical mediums, it is said to run at wire speed. Also called **wire rate**.
- wire splice** The joining of two wires, usually by twisting their ends together, with or without soldering. Also, the act of so joining, and the place where such a joint occurs.
- wire stripper** A usually hand-held tool which cuts and removes the insulation of a wire without harming the inner conductors.
- wire tap** Same as **wiretap**.
- wire-tapping** Same as **wiretapping**.
- wire telegraphy** Telegraphy using connected wires, as opposed to radio waves, for transmission.
- wire telephony** Telephony using connected wires, as opposed to a radio link.
- wire-wound resistor** Same as **wirewound resistor**.
- wire wrap** The connection of a wire by wrapping several turns around a post, lug, pin, or terminal. This may be done by hand, or with a specialized tool. Also called **wire-wrap connection**.
- wire-wrap connection** Same as **wire wrap**.
- wire-wrapping tool** A tool specifically designed to make **wire-wrap connections**.
- wiredrawing** Same as **wire drawing**.
- wireframe model** A model illustrated using **wireframe modeling**. Also spelled **wire frame model**.
- wireframe modeling** Modeling, such as that utilized in CAD, in which 3D images or objects have the edges of each surface are represented by lines, as if the model were fashioned using strands of wire. Also spelled **wire frame modeling**.
- wireless** 1. A mode of transmission and/or reception of information, such as voice, video, data, or control signals, in which there are no connecting wires. Instead, communication is achieved by means of electromagnetic waves, such as radio-frequency waves or infrared waves, or via acoustic waves. There are many examples, including wireless telephones, wireless keyboards, and wireless networks. Also called **wireless communications**, or **wireless telecommunications**. 2. A device, component, piece of equipment, or system which communicates in a **wireless (1)** manner.
- wireless application protocol** A protocol for wireless communications that enables wireless devices, such as properly equipped digital cellular telephones or PDAs, to access content from Internet, for uses such as retrieval of email, ecommerce, or researching via search engines. The Web pages displayed are usually stripped of complex graphics. Its abbreviation is **WAP**.
- wireless application protocol gateway** Software which performs the protocol conversions necessary to enable wireless devices, such as properly equipped digital cellular telephones or PDAs, to connect to another network, such as the Internet, which utilizes different protocols. Its abbreviation is **WAP gateway**.
- wireless application protocol portal** A Web portal which is accessed by wireless users and which tailors to their specific browsing needs, such as transmitting in a manner which minimizes the occupied bandwidth, and reducing the need for keyboard input. Its abbreviation is **WAP portal**. Also called **wireless portal**.
- wireless bridge** A device which serves to connect network nodes via radio-frequency waves, such as microwaves or infrared waves.
- wireless broadband** Broadband communications in which there are no connecting wires. Instead, communication is achieved by means of RF waves, such as microwaves waves or infrared waves. Also called **wireless broadband communications**, or **broadband wireless**.
- wireless broadband communications** Same as **wireless broadband**.
- wireless broadband network** A broadband network which provides high-speed communications, including data, voice, video, TV, Internet, videoconferencing, and so on, without connecting wires. Its abbreviation is **WBN**.
- wireless cable** Broadband cable TV, such as a Multichannel Multipoint Distribution Service, which does not utilize con-

necting wires. It is common for wireless cable to also offer Internet access and other data transmission services.

**wireless communications** Same as **wireless (1)**.

**wireless connection** A communications connection which is **wireless (1)**.

**wireless data** Information sent via **wireless data transmission**.

**wireless data transmission** The transmission of data in a **wireless (1)** manner.

**wireless device** A device which communicates in a **wireless (1)** manner.

**Wireless Fidelity** Same as **Wi-Fi**.

**wireless headphones** Headphones which do not have a cord. Such headphones receive signals from its base unit which is plugged into an audio amplifier, or similar device. Also called **cordless headphones**.

**wireless intercom** Also called **wireless intercom system**. 1. An intercom system which does not utilize connecting wires, cords, or cables. 2. An intercom system which utilizes the power-line wiring present in a given structure or location. Each station simply plugs into an available outlet.

**wireless intercom system** Same as **wireless intercom**.

**wireless Internet** Internet access via radio-frequency waves, such as microwaves. This type of access may be obtained, for instance, using a properly equipped cellular telephone or PDA. Its abbreviation is **wireless net (1)**.

**wireless keyboard** A computer keyboard which does not have a cord. Such a keyboard may use infrared or radio-frequency waves to communicate with the computer. Also called **cordless keyboard**.

**wireless LAN** Abbreviation of **wireless local-area network**. A LAN whose nodes communicate via radio-frequency waves, such as microwaves, or infrared waves. Useful, for instance, in settings where multiple nodes, such as computers, are constantly in motion. Its own abbreviation is **WLAN**. Also called **local-area wireless network**.

**wireless local-area network** Same as **wireless LAN**.

**wireless local loop** The use of RF waves, such as microwaves, for last mile connections between a telephone company's central office and the customers it serves. May be used, for instance, to provide telecommunications access to new communities without having to run wires or cables to each user. Its abbreviation is **WLL**. Also called **radio local loop**.

**wireless loudspeakers** Same as **wireless speakers**.

**wireless markup language** A markup language that is utilized to provide Internet content to mobile devices, such as properly equipped digital cellular telephones or PDAs. This format is tailored to the special needs of such devices, such as reducing the need for keyboard input. Its abbreviation is **WML**.

**wireless medium** A communications pathway which is not physically linked by cables or wires. For instance, the communications channels among the nodes of a wireless network.

**wireless microphone** A microphone which does not have a cord. It has its own power source, and transmits via infrared or radio-frequency signals. Also called **cordless microphone**.

**wireless modem** A modem which transmits data without utilizing connecting wires or cables. Used, for instance, in cell phones, PDAs, or wireless networks. Also called **radio modem**.

**wireless mouse** A computer mouse which does not have a cord. Such a mouse may use infrared or radio-frequency waves to communicate with the computer. Also called **cordless mouse**.

**wireless net** 1. Same as **wireless Internet**. 2. Same as **wireless network**.

**wireless network** A network whose nodes communicate via radio-frequency waves, such as microwaves or infrared waves. Wireless LANs and wireless WANs are examples. Such networks feature benefits such as comparative ease of setting it up, and the removal of most mobility restrictions. Its abbreviation is **wireless net (2)**.

**wireless networking** The use of a **wireless network**.

**wireless PDA** Abbreviation of **wireless personal digital assistant**. A PDA which links to a network, peripheral, and/or another computer wirelessly.

**Wireless Personal Area Network** A network in which multiple devices are wirelessly interconnected when located within a given radius, such as ten meters, and which is suitable for a single user moving around employing PDAs, desktop computers, printers, and so on. Its abbreviation is **WPAN**. Also called **Personal Area Network**.

**wireless personal digital assistant** Same as **wireless PDA**.

**wireless phone** Abbreviation of **wireless telephone**. Also called **cordless phone**. A telephone which does not have a cord between the base unit and the handset, and which communicates via low-powered radio-frequency signals. In this context, although both **cordless telephones** and **cellular telephones** are wireless, the main difference between them is that the former plugs directly into a land telephone network, while the latter is linked to it via microwaves.

**wireless portal** Same as **wireless application protocol portal**.

**wireless printer** A printer that works wirelessly with properly equipped computers. Such printers and computers usually communicate via infrared signals. For best results, the communicating devices should be close to each other, and the signal should travel along an unobstructed path.

**wireless reception** The reception of wireless signals, such as radio-frequency waves or infrared waves, by a device such as a PDA or cellular telephone.

**wireless remote control** Remote control which utilizes radio, infrared, or acoustic waves, as opposed to connecting wires or cables.

**wireless security system** A security system whose components are not physically wired to each other, instead using radio-frequency and/or infrared signals to communicate. Such a system is ideally suited for structures that are already built, or in locations where a cabled arrangement would be impractical.

**wireless service** A service in which information, such as voice, video, or data, is transmitted and/or received without the use of connecting wires. Instead, signals are sent by means of electromagnetic waves such as radio-frequency waves or infrared waves. Cellular and satellite communications are two examples of such services.

**wireless service provider** A provider of wireless communications services, such as wireless Internet, or cellular telephony.

**wireless speakers** Speakers which do not have a cord. Such speakers incorporate their own amplifiers, and receive their signals from an audio amplifier, or similar device. Also called **wireless loudspeakers**.

**wireless standard** A standard or protocol, such as wireless application protocol, utilized for wireless communications.

**wireless system** A system which provides **wireless communications**. Such a system includes transmitting equipment, control mechanisms, the information-bearing signals so sent, the transmission path they follow, and receiving devices.

**wireless technology** Any technology, such as that utilized in cellular telephony, GPS, or wireless networks, which does

not use connecting wires or cables for the exchange of information.

**wireless telecommunications** Same as **wireless** (1).

**wireless telegram** A message sent via **wireless telegraphy**.

**wireless telegraph** Also called **radiotelegraph**. 1. The transmission of **wireless telegrams**. 2. A device utilized to send **wireless telegrams**.

**wireless telegraphy** Telegraphy in which radio waves are utilized, as opposed to wires. Also called **radiotelegraphy**.

**wireless telephone** Same as **wireless phone**.

**wireless telephony** The use of telephones for **wireless communications**.

**wireless transmission** The transmission of wireless signals, such as radio-frequency waves, by a device such as a microwave antenna.

**wireless WAN** Abbreviation of **wireless wide-area network**. A WAN whose nodes communicate via radio-frequency waves, such as microwaves. Such a network may span multiple countries. Its abbreviation is **WWAN**.

**wireless Web** Wireless access to the World Wide Web. A wireless portal, for instance, may be used for this.

**wireless wide-area network** Same as **wireless WAN**.

**wirelessly** Without the use of connecting wires, cables, or the like.

**wiresonde** An instrument similar to a radiosonde, except that the gathered data is transmitted via a connecting wire or cable.

**wiretap** Also spelled **wire tap**. 1. A concealed device which serves to surreptitiously intercept a communication, especially a telephonic conversation. Also called **tap** (4). 2. To install a **wiretap** (1), or make such a connection. Also called **tap** (5). 3. To monitor and/or record a communication using a **wiretap** (1). Also called **tap** (6).

**wiretapping** The use of a **wiretap** (1). Also, the installation of a **wiretap** (1). Also spelled **wire-tapping**.

**wireway** A specially designed channel through which cables and wires are run. A cable tray provides mechanical support, and protection which is tailored to specific needs. Such protection may include jackets and/or shields which safeguard against flames, high electrical noise, vibrations, crushing, and so on. Also called **cable tray**.

**wirewound resistor** A resistor in which the resistive element is a length of a resistance wire or strip, such as that made of nichrome, which is wound around insulating form or core. Also spelled **wire-wound resistor**.

**wiring** Also called **electric wiring**. 1. The system of wires and/or conductors that connect electrical components, circuits, and devices together. For instance, the wires in a piece of electrical equipment, or the interconnections between components of an IC. 2. The process of installing or manufacturing **wiring** (1).

**wiring board** A patch panel, plugboard, printed-circuit board, or other panel or board serving for mounting and making connections between components and circuits.

**wiring capacitance** A capacitance which is not concentrated within a capacitor. Examples include the capacitance between the turns in a coil, or between adjacent conductors of a circuit. This contrasts with **lumped capacitance**, which is concentrated within a capacitor. Also called **self-capacitance**, **stray capacitance**, or **distributed capacitance**.

**wiring closet** A location or enclosure, such as a wall box or distribution frame, that houses communications wires and cables, and which provides terminals and connections.

**wiring connector** A device, object, or tool, such as a binding post or a wire-wrapping tool, which serves to join two or more conductors.

**wiring diagram** A graphical representation of the electrical elements in a circuit, and the way each is interconnected with each other. Each circuit element is represented by a symbol, while lines represent the wiring. Also called **wiring schematic**, **circuit diagram**, **schematic circuit diagram**, or **diagram** (3).

**wiring harness** A group of insulated conductors which are bound together so as to facilitate the connection of their various terminals. Used, for instance, to run multiple automobile cables, each controlling individual items or systems, such as brake lights, turn indicators, trunk releases, and electrical signals enhancing braking.

**wiring schematic** Same as **wiring diagram**.

**withstand voltage** Same as **withstanding voltage**.

**withstanding voltage** The maximum voltage which can be applied to a dielectric without adverse effects, such as dielectric breakdown. Also called **withstand voltage**, or **dielectric withstanding voltage**.

**wizard** 1. An interactive utility which provides help, such as that which may be needed during the installation or use of an application. Such a wizard usually provides guidance step-by-step. Also called **assistant**. 2. An expert in some area of computing or networking, such as a hacker. 3. A user with certain privileges in a given setting, such as MUDs.

**WLAN** Abbreviation of **wireless LAN**.

**WLL** Abbreviation of **wireless local loop**.

**WM** Abbreviation of **wattmeter**.

**WML** Abbreviation of **wireless markup language**.

**WO** Abbreviation of **write once**.

**wobblulator** A signal generator whose output is varied continuously between two limits. Used, for instance, to determine the frequency response of a circuit or device.

**wolfram** A lustrous silver-gray metal whose atomic number is 74. It is very hard and dense, ductile, has great corrosion resistance, and has the highest melting point and lowest vapor pressure of all known metals. At elevated temperatures it also has the highest tensile strength. It has almost 35 known isotopes, of which 3 are stable. Its applications include its use as bulb filaments, in electron tubes, in X-ray tubes, hard parts such as rocket nozzles, and in high-speed cutting devices and tools. Its chemical symbol is **W**. Also called **tungsten**.

**Wollaston wire** An extremely fine platinum wire which is used, for instance, in hot-wire instruments.

**Wood's alloy** Same as **Wood's metal**.

**Wood's metal** A silver-gray alloy whose composition is 50% bismuth, 25% lead, 12.5% tin, and 12.5% cadmium. It is used, for instance, as a solder with a low melting point. Also called **Wood's alloy**.

**woofer** A large speaker designed to reproduce frequencies below a given threshold, such as 1000 or 300 Hz. Depending on the design and components, a woofer may accurately reproduce frequencies below the limit of human hearing. Such a speaker unit is usually utilized with others, such as midranges and tweeters, for reproduction across the full audio spectrum. Also called **low-frequency speaker**.

**Word** A common word processing program.

**word** The fundamental unit of storage for a given computer architecture. It represents the maximum number of bits that can be held in its registers and be processed at one time. A word for computers with a 32-bit data bus is 32 bits, or 4 bytes. A word for computers with a 256-bit data bus is 256 bits, or 32 bytes, and so on. Also called **computer word**.

**word processing** The use of a **word processor**.

**word processing application** Same as **word processor**.

**word processing program** Same as **word processor**.