

WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY

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Lexicographer



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altitude of approximately 35,900 kilometers, and its orbit is in the plane of the equator. As few as three of these satellites can provide worldwide coverage. Used, for instance, for communications and broadcasting. Also called **geostationary satellite**, or **geosynchronous satellite**. 2. A satellite which remains fixed in relation to a celestial body such as the earth, moon, or sun.

fixed-satellite service Radiocommunication service between fixed stations, utilizing one or more satellites. Also, communications links between said satellites. Its abbreviation is FSS.

fixed service Radiocommunication service between fixed stations.

fixed station A station whose location does not change. For instance, a land station. This contrasts with a **mobile station**, whose location is not fixed.

fixed storage 1. A computer storage device, such as a hard disk drive, which can not be removed. 2. Stored data which can not be altered. Also called **read-only storage**.

fixture 1. A mechanical component or device which serves to join, align, or hold two or more parts. For example, a cable connector, or a waveguide gasket. 2. An item, such as a socket or light, which is permanently attached to a structure, such as a wall or a building.

fl Same as **fL**.

fL Abbreviation of footlambert.

FL Same as **fL**.

flag 1. Something utilized to notify, remind, identify, comment, or warn. 2. In computers, a marker, code, or sequence of bits which serves as a **flag** (1). For example, such a flag indicating the end of a process, or an error condition. 3. In communications, a marker, code, or sequence of bits which serves as a **flag** (1). For example, such a flag indicating the end of a transmission, or notifying of an upcoming control code.

flag register A register whose content indicates aspects of the internal status of a CPU, or a part of a CPU such as an arithmetic-logic unit. Also called **status register**.

flame 1. A hot and luminous gaseous body undergoing combustion. 2. A communication or message, such as an email or a newsgroup posting, which is insulting or otherwise abusive in nature. Also, to send such a message.

flame alarm An electrical and/or mechanical device which serves to notify or warn of a flame by means of a signal, such as sound and/or light. Also, such a warning.

flame bait Same as **flamebait**.

flame detector A device which senses the presence of a flame. Such a device, for instance, may indicate the rate at which fuel is undergoing combustion, and send a signal to a control system regulating said combustion.

flame-proof Same as **flameproof**.

flame war 1. A heated exchange, such as that between the participants of an online newsgroup, intended to insult, degrade, or enrage others. 2. A heated exchange in a forum such as an online newsgroup.

flamebait The sending or posting of one or more messages which are insulting or otherwise abusive in nature, so as to elicit a strong reaction or lead to a **flame war** (1). Also spelled **flame bait**.

flameproof Also spelled **flame-proof**. 1. Impervious, or highly resistant, to a flame. 2. Protected in a manner which does not allow a flame to enter an enclosure.

flammable That which is easily ignited or burned. Also called **inflammable**.

flange A protruding rim or edge which guides and/or imparts strength when attaching one object to another. For instance, such a projection which helps insure the snug fit of a plug inserted in a jack.

flanging The mixing of a signal with a time-delayed copy of the same signal, thus forming a new signal. Used, for instance, to create sound effects.

flap attenuator A waveguide attenuator in which a sheet or plate of dissipative material is placed through a non-radiating slot. As the sheet or plate is moved into and out of the slot, a variable amount of loss is introduced. Also called **vane attenuator**, **rotary-vane attenuator**, or **guillotine attenuator**.

flapping In networks, a circumstance in which routers repeatedly advertise the availability or unavailability of a given route. May be caused, for instance, by faulty circuit connections or heavy traffic.

flare 1. To open or spread outward. An example is the manner in which the cross-section of a horn-shaped radiating device increases from one end of the tube to the other. 2. On an oscilloscopic screen, such as that of a radar, an excessively bright area. Such an area is usually enlarged and distorted. 3. A brief and intense light or flame. 4. A bright eruption which develops near the surface of the sun. These are of tremendously high temperature, take a few minutes to reach full strength, and subside over the next hour or so. High-energy particles and rays are explosively released, and when they reach the earth may cause radio interference, magnetic storms, or auroras. Also called **solar flare**.

flare angle The progressive change in the cross-section of a waveguide, horn antenna, or horn speaker.

flash 1. A sudden burst of bright light. 2. A repeatable and artificially produced burst of bright light. Such a flash is usually generated by applying a high voltage to an electrode of a tube containing an inert gas such as xenon. The gas becomes ionized, which permits it to rapidly discharge the energy previously stored in a capacitor. Used, for instance, in photography. Also called **photoflash**, **strobe** (3), or **electronic flash**. 3. To occur suddenly, or to proceed rapidly. 4. To press a telephone switchhook briefly to access a function such as call-waiting, or three-way calling. Also, a button so labeled. Also, to press a button so labeled. Also called **hook flash**. 5. To write onto **flash memory**.

Flash A technology utilized for the creation of Web multimedia content, such as animation and streaming graphics. Also, the software utilized for such creations, and the file format. Content is usually displayed by having the appropriate browser plug-ins.

flash arc In a thermionic tube, a current surge occurring between electrodes which may destroy said tube.

flash BIOS A computer system's BIOS held in **flash memory** (1).

flash bulb A bulb which produces a burst of bright light. It contains a combustible material, such as magnesium, which is ignited by a small voltage. Used, for instance, in photography. A flash bulb may only be used once, while a **flash tube** may be utilized many times.

flash card Flash memory contained in an expansion card. Used, for instance, for storage in portable or handheld computers such as notebooks and PDAs, MP3 players, or in digital cameras. Also called **flash-memory card**.

flash disk A storage disk composed of flash memory chips.

flash EEPROM Flash memory utilized as a programmable ROM chip. It is similar to other programmable ROM chips, such as EEPROMs, but do not permit bit by bit writing and erasing. Also called **flash EPROM**.

flash EPROM Same as **flash EEPROM**.

flash lamp Same as **flash tube**. Also spelled **flashlamp**.

flash memory 1. A memory chip that retains its content without power, and which is written and erased in blocks of a fixed size. It is similar to programmable ROM chips, such as EEPROMs, but do not permit bit by bit writing and erasing.

- ing. Used, for instance, for storage in portable or handheld computers such as notebooks and PDAs, in cellular phones, MP3 players, or to store the BIOS of a system. Also called **flash-memory chip**. 2. The content stored in flash memory (1).
- flash-memory card** Same as **flash card**.
- flash-memory chip** Same as **flash memory** (1).
- flash-over** Same as **flashover**.
- flash-over voltage** Same as **flashover voltage**.
- flash plating** The electrodeposition of a very thin layer. Used, for instance, to provide a base for a subsequent layer of plating.
- flash RAM** Flash memory utilized as RAM.
- flash ROM** Flash memory utilized as ROM.
- flash test** A method of testing insulation, consisting in momentarily applying a voltage that is much higher than the working voltage.
- flash tube** The tube utilized to produce a **flash** (2). Also spelled **flashtube**. Also called **flash lamp**, or **electronic flash tube**.
- flashback voltage** The peak inverse voltage required for ionization in a gas-discharge tube.
- flasher** A circuit or device which serves to **flash** (2) one or more lights. Also called **light flasher**.
- flashlamp** Same as **flash tube**.
- flashover** A disruptive discharge in the form of an arc or spark between conductors, such as electrodes. It is generally caused by high voltages. Also spelled **flash-over**.
- flashover voltage** Also spelled **flash-over voltage**. 1. The voltage at which **flashover** occurs. 2. The voltage at which a disruptive discharge occurs between conductors, such as electrodes, separated by an insulating material. This discharge may occur around or along the surface of said insulator. Also called **sparkover voltage** (2).
- FlashPix** A file format providing multiple-resolution storage of images. Used, for instance, to provide the appropriate resolution of graphics displayed by Web pages, based on the connection speed.
- flashtube** Same as **flash tube**.
- flat** 1. Lacking curvature. Said, for instance, of a surface, or of a frequency response. 2. Completely discharged. Said of a battery.
- flat address space** An address space in which memory addresses start at zero, and work their way up to the maximum address. Also called **linear address space**.
- flat cable** A cable in which the conductors are arranged along the same plane, and laminated or molded into a flat flexible ribbon. Used, for instance, to connect components in computers, LCD displays, DVD players, copiers, and so on. Also called **flat-conductor cable**, **flat-flexible cable**, **flexible-flat cable**, **ribbon cable**, or **tape cable**.
- flat-conductor cable** 1. Same as **flat cable**. 2. A flat cable with flat conductors.
- flat display** A video display which is comparatively thin. At present this represents a depth of about 50 mm or less, but this number is being reduced over time. Liquid-crystal, plasma, and electroluminescent displays are examples. Such displays usually feature high resolution, high contrast, minimal image distortion, and a light weight. Used, for instance, in computers and TVs. Also called **flat monitor**, **flat-panel display**, **flat-panel monitor**, or **panel display**.
- flat fading** Fading in which all frequency components are equally affected at all times.
- flat file** A data file whose contained records are of a single type, and which have no structured relationships between them.
- flat-flexible cable** Its abbreviation is **FFC**. Same as **flat cable**.
- flat frequency response** Also called **flat response**, or **uniform frequency response**. 1. For a component, circuit, device, piece of equipment, or system whose output is an interval of frequencies, a response in which all frequencies have equal amplitude. 2. For a component, circuit, device, piece of equipment, or system whose output is an interval of frequencies, a response in which all frequencies are within a specified interval of amplitudes. For example, a high-fidelity amplifier may have a frequency response of 10 Hz to 60 kHz, ± 0.5 decibels, and be considered to be flat.
- flat line** A radio-frequency transmission line, or an interval of one, whose standing-wave ratio is 1:1, or very nearly so. Also called **flat transmission line**.
- flat monitor** Same as **flat display**.
- flat pack** A flat rectangular or square IC package with leads projecting horizontally from two or four of its sides. An example is a quad flat pack. Also spelled **flatpack**.
- flat-panel display** Same as **flat display**. Its abbreviation is **FPD**.
- flat-panel distributed-mode speaker** Same as **flat-panel speaker**.
- flat-panel loudspeaker** Same as **flat-panel speaker**.
- flat-panel monitor** Same as **flat display**.
- flat-panel speaker** 1. An acoustic radiator consisting of a flat panel a few millimeters in thickness, which vibrates over its entire surface without pistonic motion. Such panels are very lightweight, disperse sound evenly in all directions at all reproduced frequencies, and have a fairly linear frequency response. Also called **flat-panel loudspeaker**, **flat-panel distributed-mode speaker**, or **distributed-mode speaker panel**. 2. A speaker which is especially thin and usually lightweight. Used, for instance, as computer speakers placed on a desk, or as wall-mounted speakers in a home theater system. Also called **panel speaker**.
- flat-panel speaker technology** The technology employed in a **flat-panel speaker**.
- flat-panel television** Same as **flat-panel TV**.
- flat-panel TV** A TV with a flat display.
- flat response** Same as **flat frequency response**.
- flat screen** The viewing screen of a flat display.
- flat television screen** The viewing screen of a flat-panel TV.
- flat top** 1. The uniform interval of frequencies within a **flat-top response**. 2. The horizontal part of an antenna. 3. Same as **flat-top antenna**.
- flat-top antenna** An antenna with two or more radiating elements which are parallel to each other and to the ground, each fed at or near their midpoint. Also called **flat top** (3).
- flat-top response** A response characteristic which shows an interval of frequencies which is transmitted uniformly. Outside of this range the frequencies are highly attenuated, providing for an overall graph with a mostly flat top. Also called **bandpass response**.
- flat transmission line** Same as **flat line**.
- flat TV screen** The viewing screen of a flat-panel TV.
- flatbed scanner** An optical scanner which provides a flat surface upon which that to be scanned is placed. This contrasts, for instance, with a handheld scanner.
- flatpack** Same as **flat pack**.
- flaw** An imperfection, defect, irregularity, or discontinuity. For instance, imperfections in a crystal lattice.
- Fleming's left-hand rule** Also called **Fleming's rule** (1), or **left-hand rule**. If conventional current is used instead of electron flow, each of these become **right-hand rules**, as conventional current travels in the opposite direction. 1. A

provides service between subscribers served by different central offices.

interface 1. The point or points where two entities meet. For instance, the connection between devices exchanging information, the boundary between two phases of matter such as that between an electrode and an electrolyte, or between semiconductor regions. 2. A device which serves to connect a computer to peripheral devices or a network. Such interfaces include SCSI, RS-232, and network adapters. Also called **computer interface** (2). 3. Any **interface** (1) used in association with a computer, such as those between programs, between hardware and software, between hardware and a user, or between software and a user. Also called **computer interface** (3).

interface adapter Same as **interface card**.

interface card A circuit board which is plugged into the bus or an expansion slot of a computer, in order to enable the exchange of data with a peripheral or a network. An example is a network adapter. Also called **interface adapter**.

interface connection A conductor which makes electrical contact between patterns on both sides of a printed-circuit board or chassis. Also called **feedthrough**.

interface routine A program routine, such as a that contained in a device driver, which assists a computer in communicating with a peripheral, or with another system.

interference 1. Any energy which diminishes the quality of a desired signal, or the performance of a component, circuit, device, piece of equipment, or system. 2. In a communications system, any energy which diminishes the ability to receive a desired signal, or that impairs its quality. Sources include electromagnetic noise, undesired signals, parasitic oscillations, or atmospheric conditions. Also called **electric interference**, or **radio interference**. 3. The variations in amplitude occurring in the wave resulting from the superimposition of waves from two or more coherent sources whose phase difference varies. As the phase difference approaches and reaches 0° there is constructive interference, resulting in an increase in amplitude, and as the phase difference approaches and reaches 180°, there is destructive interference, resulting in a reduction or cancellation in amplitude. Interference can occur in waves residing along any part of the electromagnetic spectrum. Also, the additive process by which this phenomenon occurs. Also called **wave interference** (2). 4. The mutual effect two or more superimposed waves or vibrations have on each other. Also called **wave interference** (1).

interference analyzer An instrument that detects sources of interference and/or which serves to analyze its content. Used, for instance, to detect adjacent-channel interference, alternate-channel interference, co-channel interference, and the like.

interference attenuation Same as **interference suppression**.

interference attenuator A circuit or device which reduces the amplitude of interference.

interference control The monitoring of a given interval of frequencies, for the detection of possible interference.

interference eliminator A circuit or device which greatly reduces, or eliminates, the amplitude of interference. An example is an interference filter.

interference fading The fading of a radio signal due to different waves traveling by slightly different paths arriving at the receiver.

interference filter A filter which greatly reduces, or eliminates, the amplitude of interference. Such a filter, for instance, may attenuate interference signals entering a receiver through a power line.

interference pattern The characteristic pattern of amplitude variations which is created by the interaction of two or more superimposed waves from coherent sources whose phase

difference varies. This results in a spatial distribution of particle energies, particle densities, pressure, energy flux, or the like. For example, such a pattern which is produced by passing visible light through narrow slits. A hologram stores an interference pattern which is formed by a coherent beam of light reflected by a reference mirror, and by light scattered by the object being photographed.

interference reduction Same as **interference suppression**.

interference rejection The use of components or devices, such as interference filters, to reject interfering signals.

interference signal Also called **interfering signal**. 1. Any extraneous signal which diminishes the quality of a desired signal, or the performance of a circuit, component, device, piece of equipment, or system. 2. In a communications system, any extraneous signal which diminishes the ability to receive a desired signal, or that impairs its quality.

interference suppression The reduction or elimination of the amplitude of interference. This may be accomplished, for instance, using an interference filter, or in the case of a received signal, by employing an antenna with the appropriate design. Also called **interference reduction**, or **interference attenuation**.

interference threshold The minimum signal-to-noise ratio needed to help insure error-free communications.

interfering signal Same as **interference signal**.

interferogram The displayed or graphic record made by an **interferometer**.

interferometer An instrument in which a beam of electromagnetic radiation is split, and subsequently recombined after traveling along paths of different length. This results in the production of interference patterns which can be utilized for various purposes, including the extremely accurate measurement of distances and thicknesses, or indices of refraction. In addition, such an instrument can be used for testing optical elements, and to locate and study electromagnetic radiation wherever it occurs, be it in space or at a subatomic level.

interferometry The design, study, and utilization of **interferometers** to measure and analyze interference patterns of electromagnetic waves.

interframe 1. Anything occurring between multiple frames of video. 2. Same as **interframe coding**.

interframe coding Video compression in which temporal redundancy is factored in. This form of compression takes advantage of the similarities between successive frames, so only the differences between them are coded, providing for higher compression ratios. This contrasts with **intraframe coding**, in which temporal redundancy is not factored in. Also called **interframe compression**, or **interframe** (2).

interframe compression Same as **interframe coding**.

interim storage A segment of computer memory or storage which is utilized to temporarily store information that awaits transfer or processing. A buffer is an example. Also called **temporary storage**.

Interior Gateway Protocol A protocol utilized for exchanging routing information within an autonomous system, such as a LAN. Its abbreviation is **IGP**.

Interior Gateway Routing Protocol A network routing protocol superseding Routing Information Protocol. It utilizes multiple criteria, such as reliability, the link's speed, and packet size, to determine the best path for data, and uses less bandwidth. Usually used in autonomous systems, such as LANs. Interior Gateway Routing Protocol itself has an improved version, which is **Enhanced Interior Gateway Routing Protocol**. Its abbreviation is **IGRP**.

interlace scanning Same as **interlaced scanning**.

interlaced Pertaining to, utilizing, or incorporating **interlaced scanning**.

population 1. In statistics, an aggregate of items from which samples are taken. 2. The placement or supplying of components, devices, data, members, or the like. For example, the mounting of components on a circuit board.

population inversion For an atomic system, the condition where there are more electrons in a higher energy state than a given lower state, such as the ground state. Population inversion is required to establish and maintain lasing action. Since atomic systems tend to prefer more electrons in lower states, external energy, such as electromagnetic radiation of a suitable frequency, is required to maintain population inversion.

popup Same as **pop-up**.

popup ad Same as **pop-up ad**.

popup help Same as **pop-up help**.

popup menu Same as **pop-up menu**.

popup message Same as **pop-up message**.

popup window Same as **pop-up window**.

porcelain A hard white ceramic which is strong, translucent, and which usually has a hard glaze. Used, for instance, as a insulator, a dielectric, and in capacitors.

porcelain capacitor A capacitor in which a high-grade porcelain serves as the dielectric.

porcelain insulator An electrical insulator composed of, or incorporating, porcelain.

porch In a composite video signal, either the front porch or the back porch.

port 1. A point or opening which provides an input, output, or interface. For example, an I/O port, a speaker port, or an input to an electric network. 2. An input, output, or other point where a signal or energy can be provided to, or taken from, a circuit or system. For instance, a point where a meter may be placed for readings. 3. An input, output, or interface between a computer and a peripheral, another computer, or a network. For instance, a data port. 4. An input, output, or interface between a CPU and a peripheral. For example a USB port, or a serial port. Also called **I/O port**. 5. To modify a program so that it can function properly within a different system or architecture. 6. A carefully-dimensioned opening in a loudspeaker enclosure. It is employed for various purposes, but it is mainly used to increase and extend the reproduction of low frequencies. Also called **speaker port**, **duct** (5), **ducted port**, or **vent** (3). 7. An opening in a waveguide through which energy can be fed to, or taken from. For example, an opening utilized to take measurements. Also called **waveguide port**.

Port 80 A port number commonly used over the Internet for HTTP traffic.

port address Same as **port number**.

port address translation The process of redirecting a given IP address or port to a different IP address or port. It is a type of network address translation. Its abbreviation is **PAT**. Also called **port mapping**.

port aggregation The use of multiple paths between network nodes, so as to increase transmission speed.

port density The number of ports for a given network device. Such ports may be physical or logical.

port expander A device which serves to connect multiple inputs to a single port. An example is a USB hub.

port mapping Same as **port address translation**.

port number In a communications network such as a TCP/IP, a number which identifies the type of port. Port 80, for instance, is commonly used over the Internet for HTTP traffic. Also called **port address**, **protocol port**, or **protocol port number**.

port replicator A device which has multiple computer ports, such as those utilized for keyboards, monitors, printers, and

other peripherals, and which provides a single socket into which a portable computer is plugged in. This saves the time and inconvenience of plugging in all components each time the computer is at this location. A port replicator is similar to a docking station, except that the latter provides additional slots for expansion.

port speed The data transfer rate of a given **port** (4). For example, a USB 2.0 port supports rates of up to 480 Mbps, FireWire provides up to over 2 Gbps, and a 100-Gigabit Ethernet port supports data transfer rates of up to 100 Gbps.

portable 1. That which can be easily moved from one location to another. For example, a portable computer. 2. Computer software which can be utilized across multiple platforms with little or no modifications.

portable computer A computer, such as a PDA or notebook, that can be easily moved from one location to another.

Portable Document Format Same as **PDF**.

portable language A computer language, such as C, which works essentially equally well across multiple platforms.

Portable Network Graphics A format for storing bitmapped images, which features lossless compression, grayscale support, and color correction across multiple platforms. Its acronym is **PNG**.

Portable Operating System Interface for UNIX Same as **POSIX**.

portable station A station which can be moved from one location to another. Such a station may or may not be reasonably carried by a single person.

portal A Web site, such as www.google.com, which serves as a starting point to most any activity on the Internet. Web portals usually provide news, email, search engines, directories, chats, shopping, local interest topics, and so on. Also called **Web portal**, or **Internet portal**.

ported cabinet A speaker enclosure which incorporates one or more ports (5). Also called **ported enclosure**, or **vented cabinet**.

ported enclosure Same as **ported cabinet**.

ported loudspeaker Same as **ported speaker**.

ported speaker A speaker with a **ported cabinet**. Also called **ported loudspeaker**.

portrait 1. Same as **portrait mode**. 2. In computers, pertaining to something whose height is greater than its width, such as a portrait display.

portrait display A computer display whose height is greater than its width. Also, the positioning of a monitor in this fashion when both portrait and landscape orientations are available. Also called **portrait monitor**.

portrait format Same as **portrait mode**.

portrait mode A manner of printing, or presenting information on a screen, in which the height of a page is greater than its width. This contrasts with **landscape mode**, in which the width is greater than the height. Also called **portrait** (1), **portrait orientation**, or **portrait format**.

portrait monitor Same as **portrait display**.

portrait orientation Same as **portrait mode**.

pos 1. Abbreviation of **positive**. 2. Abbreviation of **position**.

POS 1. Abbreviation of **point of sale**. 2. Abbreviation of **packet over SONET**.

POS keyboard Same as **point-of-sale keyboard**.

POS system Abbreviation of **point-of-sale system**.

POS terminal Abbreviation of **point-of-sale terminal**.

position Its abbreviation is **pos**. 1. The specific location of something within space. For example, the location of a magnetic pole, a ship, or where a laser beam is directed. Also, to place in such a location. 2. The location of something relative to something else. For instance, a line of posi-

refraction index Same as **refractive index**.

refractive Pertaining to, characteristic of, or arising from refraction. For example, a refractive index.

refractive index Also called **refraction index**, or **index of refraction**. Its symbol is n . 1. The ratio of the phase velocity of a wave in free space, to the phase velocity of the same wave in a given medium. Also called **absolute index of refraction** (1). 2. The ratio of the phase velocity of light in free space, to the phase velocity of light in a given medium. Also called **absolute index of refraction** (2). 3. Same as **relative index of refraction**.

refractivity Its symbol is N . A measure of the extent to which a medium will refract a ray. May be expressed as $N = (n - 1)$, where n is the refractive index of a given medium.

refractometer An instrument or device which measures the **refractive index** of a given material or medium. An example is an instrument which measures the critical angle of a medium.

refractometry The measurement of refractive indices of materials or mediums. Also, the techniques employed for such measurements.

refractory Also called **refractory material**. 1. A material, such as alumina or silicon carbide, with a high melting point. 2. A material, such as a ceramic, which is difficult to make soft, in addition to withstanding high temperatures.

refractory ceramic A ceramic, such as porcelain, which is difficult to make soft, in addition to withstanding high temperatures.

refractory material Same as **refractory**.

refractory metal A metal, such as tungsten, which has a high melting point, and which is difficult to make soft.

refrangible That which can be refracted.

refresh 1. To renew the image presented on a display screen, such as that of a computer, by resending the appropriate signals. This is necessary, as the phosphors only glow for a comparatively short time. Also called **redraw** (1). 2. To maintain the condition of memory cells or modules, by sending the appropriate pulses. Most forms of RAM, for instance, require refreshing to avoid loss of data. 3. To restore to a previous condition. 4. To clear all options, windows, or the like, on a display screen. 5. To update the contents of fields, records, or the like.

refresh cycle All the processes involved in a **refresh** (2). This may occur several thousand times per second. Some types of RAM can self-refresh, which reduces power consumption.

refresh rate The number of times per second that a **refresh** (1) or **refresh** (2) occurs. For example, a monitor may have a refresh rate of 200 Hz, while a DRAM chip may refresh 4000 times per second.

refrigerant A substance which serves to cool an object, material, region, component, device, piece of equipment, and so on. At cryogenic temperatures neon may be used as a refrigerant, at low temperatures nitrogen could be utilized, and air may be used at high temperatures, as in its cooling of heat sinks.

refrigerator A compartment, appliance, room, or other enclosure utilized to keep that inside cooler than a given temperature. An adiabatic demagnetization refrigerator, for instance, can cool to temperatures near absolute zero.

refurbish To clean and repair to bring back to the original condition.

regenerate 1. To again generate. For example, to refresh a signal, or to create anew a state which is improved. 2. To restore a pulse or pulse train to its original shape. Said for instance of a signal which has been distorted.

regeneration 1. The process of again generating, or of restoring a pulse or pulse train to its original shape. 2. Same as **regenerative feedback**.

regenerative amplifier An amplifier circuit which utilizes **regenerative feedback**, for increased gain and sensitivity.

regenerative braking A form of dynamic braking in which the generated energy is stored, instead of being dissipated into heat. Used, for instance, in specially-equipped trains or cars. Also called **dynamic braking** (2).

regenerative detector A detector circuit which utilizes **regenerative feedback**, for increased gain and sensitivity.

regenerative feedback In an amplifier or system, feedback which is in phase with the input signal, thus reinforcing it. While this results in an increase in gain, an excess can destabilize amplification, and produce distortion and noise. Howl may occur, for instance, if positive feedback exceeds a given threshold. Also called **regeneration** (2), or **positive feedback**.

regenerative receiver A receiver circuit which utilizes **regenerative feedback**, for increased gain and sensitivity.

regenerative repeater A repeater which restores pulses to their original shape, amplifies, and retransmits. Also called **regenerator** (2).

regenerator 1. A circuit or device which effects **regeneration** (1). An example is a pulse regenerator. 2. Same as **regenerative repeater**.

region 1. A given area or zone. For example, the D region of the ionosphere, a far-field region, or a p-region of a semiconductor. 2. A defined interval, such as the IR, microwave, or UV regions. 3. A contiguous area of an image which is treated as a unit.

regional channel A broadcast channel offering **regional programs**.

regional program A broadcast utilizing two or more stations within a geographic area, as opposed to a local or national program.

regional reception The reception of a **regional program**.

regional transmission The transmission of a **regional program**.

register 1. A high-speed storage area within the CPU, which is utilized to hold data for specific purposes. Before data may be processed, it must be represented in a register. There are various types, including control registers, index registers, arithmetic registers, and shift registers. Also called **data register**, or **storage register** (1). 2. A device which records and/or stores a value or number. Also called **storage register** (2). 3. To indicate. For example, for an instrument to register a given value. Also, that which is so indicated. 4. To align, or be in proper alignment. Said, for instance of superimposed images.

register capacity The interval of values which can be accepted or stored by a **register** (1) or **register** (2).

register length The number of digits, characters, or the like, which can be accepted or stored by a **register** (1) or **register** (2).

registered jack Same as **RJ**.

registration 1. The act or process of recording and/or storing a value or number. 2. The act or process of indicating a value. 3. The act or process of aligning.

regression testing The running of the same sequence of tests on a program each time a modification is made. This helps ensure that any new code works properly, and that said code does not adversely affect the code already present.

regular reflection Reflection of electromagnetic or acoustic waves in which there is no diffusion or scattering. This may occur, for instance, when reflecting light off a mirror. Also called **specular reflection**, or **direct reflection**.