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Steven M. Kaplan
Lexicographer



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Kaplan, Steven M.

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transfer functions, and the number of sound sources and their locations, are taken into account. Used, for instance, in designing surround-sound systems, and in formulating audio compression techniques.

psychogalvanometer A device which measures galvanic skin response.

pT Abbreviation of **picotesla**.

Pt Chemical symbol for **platinum**.

PTC Abbreviation of **positive temperature coefficient**.

PTFE Abbreviation of **polytetrafluoroethylene**.

PTFE resin Abbreviation of **polytetrafluoroethylene resin**.

PTH Abbreviation of **plated-through hole**, or **pin-through hole**.

PTM Abbreviation of **pulse-time modulation**.

PTT Abbreviation of **push-to-talk**, or **press-to-talk**.

PTT operation Abbreviation of **push-to-talk operation**, or **press-to-talk operation**.

PTT switch Abbreviation of **push-to-talk switch**, or **press-to-talk switch**.

Pu Chemical symbol for **plutonium**.

public-address amplifier An amplifier specially designed for use in a **public-address system**. The features of such an amplifier may include multiple microphone inputs, and muting of all other inputs when telephone paging.

public-address system A system, such as that utilized in airports or shopping centers, which serves convey voice messages through a distributed group of speakers powered by one or more amplifiers. Its abbreviation is **PA system**.

public carrier A telecommunications entity, such as a telephone company, that provides services to the general public. Public carriers are usually regulated by the appropriate authorities, such as governmental agencies. Also called **common carrier**, **carrier (3)**, **commercial carrier**, or **communications common carrier**.

public data network A communications network which is established and operated by a telecommunications entity such as a public carrier. Its abbreviation is **PDN**.

public-domain software Software which has been given or otherwise relinquished to the public, and which has no protections such as a copyrights. Its abbreviation is **PD software**.

public file A file available to the public in general, as opposed to a **private file**, which is not.

public folder In a communications network, a folder available to the public in general, as opposed to a **private folder**, which is not.

public key In public-key encryption, the key which is utilized to encrypt, and which is available to the public in general. The **private key** is used for decryption, and is only intended for the recipient.

public-key cryptography Same as **public-key encryption**.

public-key encryption An encryption method which uses two keys for successful encryption and decryption of messages. The first key is used to encrypt and is public, as most anyone can look it up. To decrypt, the second key is necessary. This key is private, as only the recipient knows it. Since it is not necessary to send the decryption key in any message, this method eliminates the vulnerability inherent in its being sent to the recipient. Also called **public-key cryptography**, or **asymmetric encryption**.

Public-Key Infrastructure A system in which entities such as certification authorities issue digital certificates, or their equivalent, in order to authenticate, use, and manage cryptographic keys. Such an infrastructure helps provide a secure environment for communications and transactions using a public network such as the Internet. Its abbreviation is **PKI**.

public switched network Its abbreviation is **PSN**. 1. Same as **public switched telephone network**. 2. Any public network providing switching, which includes telephone networks and public data networks.

public switched telephone network Its abbreviation is **PSTN**. The multiple interconnected telephone networks in place worldwide, which enable most any phone to dial most any other phone around the globe. **POTS** is the basic service a **PSTN** provides. Such a network may also be used for data services, such as dial-up Internet access. Also called **public telephone network**, **public switched network (1)**, or **switched telephone network**.

public telephone network Same as **public switched telephone network**.

public Web site A Web site which can normally be accessed by any user. The term is utilized to contrast with a **private Web site**.

puck The pointing device of a digitizing tablet. It is similar to a mouse, but is much more accurate, because its location is determined by touching an active surface with an absolute reference. Also called **cursor (4)**, **pen (1)**, or **stylus (1)**.

pull 1. Same as **pull technology**. 2. To receive information utilizing **pull technology**.

pull-down menu In a GUI, a menu which is always available in the active window, but whose contents are revealed only when a user selects said menu with a mouse or keyboard command. Once selected, the menu choices are presented in a vertical array below the menu title. Also called **pop-down menu**, or **drop-down menu**.

pull-in current Same as **pickup current**.

pull-in voltage Same as **pickup voltage**.

pull switch A switch that is actuated by pulling. Such a switch, for instance, may use a cord that is pulled in case of an emergency.

pull technology Data distribution, such as that over the Internet, in which users receive information by requesting it. For example, a user requesting the download of a given page by entering its address or by clicking on a desired hyperlink. In **push technology**, material is delivered whether the user wants it or not. Also called **pull (1)**.

pulling 1. A variation in the frequency of a circuit, especially that of an oscillator, caused by an external circuit, device, or factor, such as a variation in load impedance. Also called **frequency pulling**. 2. An effect in which a component, circuit, or device induces another to change from a desired value. 3. A technique used for cultivating crystals, in which a growing crystal is slowly withdrawn from a molten solution of the crystal. Also called **crystal pulling**.

pulsar A neutron star which emits sharp and brief pulses of energy, as opposed to the usual steady stream of radiation. Pulsar pulse rates have been observed ranging from around one millisecond, to approximately 5 seconds.

pulsating current A current which passes through regular cycles, and whose average is not zero. Such a current may result, for instance, from the sum of an alternating current and a direct current. Also called **undulating current**.

pulsating DC Abbreviation of **pulsating direct current**. A DC which passes through regular cycles. While the polarity of such a current never changes, its amplitude does.

pulsating direct current Same as **pulsating DC**.

pulse For a quantity which is normally constant, a well-defined variation which increases from a steady value to a maximum, then back to or near the original value, all in a comparatively short time. Pulses may be desired or unwanted. Applications of intentionally-generated pulses include clock pulses, gate pulses, dial pulses, radar pulses, blanking pulses, and certain light pulses. Undesired pulses include noise pulses, spikes, and certain light pulses. A

pulse of very short duration is an **impulse** (3), although both terms are often used synonymously.

pulse amplifier Its abbreviation is **PA**. 1. An amplifier specifically designed to amplify **pulses**. 2. An amplifier which delivers a single output pulse for each input pulse.

pulse amplitude Also called **pulse height**. 1. For a pulse, the maximum absolute value of the displacement from a reference position, such as zero, or from a steady value which is otherwise maintained. 2. For a pulse, the instantaneous value of the displacement from a reference position, such as zero, or from a steady value which is otherwise maintained. 3. For a pulse, the average value of the displacement from a reference position, such as zero, or from a steady value which is otherwise maintained.

pulse-amplitude modulation Pulse modulation in which the amplitude of the pulses in a pulse train, which serve as the carrier, are varied according to the information-bearing signal. Its acronym is **PAM**.

pulse-amplitude selector Same as **pulse-height selector**.

pulse analysis The utilization and function of a **pulse analyzer**.

pulse analyzer An instrument which measures and indicates pulse characteristics, such as amplitude and frequency.

pulse band-width Same as **pulse bandwidth**.

pulse bandwidth The interval of frequencies within which a given percentage of the **pulse amplitude** (1) is maintained. Also spelled **pulse band-width**.

pulse carrier A pulse train utilized as a carrier. Used, for instance, in pulse-amplitude modulation.

pulse characteristics Same as **pulse form**.

pulse code 1. A code consisting of one or more combinations of pulses. 2. A pulse train which is modulated to convey information.

pulse-code modulation Modulation in which an analog signal is sampled, the amplitude of each sample is quantized, and then encoded as a digital signal for transmission. In order for the signal to be faithfully reproduced, the sampling rate must exceed the Nyquist rate. At the receiving end a decoder is utilized to recover the original information. Widely used to convert analog signals into digital form. Its abbreviation is **PCM**.

pulse coder A circuit or device which converts a signal into a coded pulse train. Also called **pulse encoder**.

pulse communications Communications utilizing any form of **pulse modulation**.

pulse counter A device detects and counts pulses. A binary counter, for example, produces one output pulse for every two input pulses, while a decade scaler produces a single pulse for every ten input pulses. Other pulse counters tally the number of pulses for a given time interval.

pulse counting The use and function of a **pulse counter**.

pulse current A unidirectional surge of current of very short duration. It quickly rises to a maximum, then drops to zero in a similar fashion. Such a surge may be produced, for instance, when switching equipment on or off. Also called **impulse current**, or **impulse** (1).

pulse decay time Same as **pulse fall time**.

pulse decoder A circuit or device which converts that which has undergone pulse modulation back into its original form. Also called **pulse detector** (1).

pulse decoding The function and use of a **pulse decoder**.

pulse detector 1. Same as **pulse detector**. 2. A device, such as a pulse counter, which senses pulses. Also called **pulse sensor**.

pulse dialer In telephony, a device which utilized for **pulse dialing**.

pulse dialing Telephone dialing in which one or more pulses interrupt a steady DC, to indicate each dialed digit. For example, when dialing a 4, four such pulses are sent. Also called **rotary dialing**.

pulse discriminator A circuit or device which makes fine distinctions between nearly identical pulses. Used, for instance, to respond only to pulses of a given shape, period, amplitude, or the like.

pulse droop 1. A detectable downward slope present in an otherwise flat top of a rectangular pulse. 2. In a pulse train, a decrease in mean pulse amplitude, after maximum amplitude has been attained. Usually expressed as a percentage of maximum amplitude. Also called **droop**.

pulse duration Its abbreviation is **PD**. 1. For a given pulse, the time interval that elapses between the end of the rise time and the start of the decay time. The pulse duration may also be defined in other manners, such as the time interval between the 50% points of peak pulse amplitude. Also called **width** (2). Also known as **pulse length**, or **pulse width**, although both are deprecated terms. 2. The time interval that a pulse is emitted or transmitted. For example, the time during which a radar pulse is transmitted.

pulse-duration modulation A form of modulation in which the duration of pulses are varied to convey meaningful information. The position of the leading and/or trailing edges of each pulse may be changed relative to its unmodulated location. Its abbreviation is **PDM**. Also called **pulse-length modulation**, or **pulse-width modulation**, although both are deprecated terms.

pulse duty factor In a pulse train, the ratio of the pulse duration, to the pulse interval.

pulse encoder Same as **pulse coder**.

pulse excitation Excitation, such as that of a laser, provided in pulses.

pulse fall time The time required for the amplitude of a pulse to decrease from a given percentage of its peak amplitude, such as 90%, to another, such as 10%. **Pulse rise time** is the converse. Also called **pulse decay time**, **fall time** (2), or **decay time** (2).

pulse form The characteristics of a **pulse**. These include the shape, such as rectangular, the amplitude, the duration, any pulse droop present, and so on. Also called **pulse shape**, or **pulse characteristics**.

pulse forming The altering of one or more characteristic of a pulse or pulse train. Also called **pulse shaping**.

pulse-forming circuit A circuit which serves for **pulse forming**. Examples include pulse stretchers and pulse regenerators. Also called **pulse-shaping circuit**.

pulse-forming line A transmission line or artificial line which serves for **pulse forming**. Used, for instance, in radars to produce high-intensity pulses. Also called **pulse-shaping line**.

pulse-forming network An electric network which serves for **pulse forming**. Examples include pulse stretchers and pulse regenerators. Also called **pulse-shaping network**.

pulse frequency Same as **pulse repetition frequency**.

pulse-frequency modulation A form of modulation in which the repetition rate of pulses within a train is varied so as to convey meaningful information. Its abbreviation is **PFM**. Also called **pulse-repetition-rate modulation**.

pulse generator A circuit or device which produces **pulses**. Such a circuit or device may produce any number of desired waveforms, with varying amplitudes, duration, and pulse repetition frequency. Also called **pulser**.

pulse group Same as **pulse train**.

pulse height Same as **pulse amplitude**.

pulse-height analyzer An instrument which separates its input into multiple channels based on pulse amplitude or height. It is a type of multi-channel analyzer.

pulse-height discriminator A circuit that acts upon pulses whose amplitude exceed a determined value. Used in detectors. Also known as **amplitude discriminator**.

pulse-height selector A circuit which produces a fixed output pulse, but only when the input pulse lies between pre-established limits of amplitude. Also called **pulse-amplitude selector**, **amplitude selector**, or **differential pulse-height discriminator**.

pulse interval Within a pulse train, the time interval between successive pulses. Also called **pulse spacing**, **pulse period**, or **pulse repetition period**.

pulse-interval modulation Same as **pulse-position modulation**. Its abbreviation is **PIM**.

pulse jitter Within a pulse train, slight variations in the intervals between successive pulses.

pulse length A deprecated term for **pulse duration** (1).

pulse-length modulation A deprecated term for **pulse-duration modulation**. Its abbreviation is **PLM**.

pulse mode 1. Operation of a component, circuit, device, piece of equipment, or system in which pulses are generated or emitted, as opposed to providing a continuous output. Also called **pulse operation**. 2. Operation of a laser in **pulse mode** (1).

pulse modulation Its abbreviation is **PM**. 1. Any form of modulation in which the amplitude, duration, repetition rate, or the like, of pulses are varied to convey meaningful information. Examples include pulse-code modulation, pulse-duration modulation, and pulse-frequency modulation. 2. Any form of modulation in which a pulse train serves as the carrier, as in pulse-amplitude modulation.

pulse modulator A circuit or device which effects **pulse modulation**.

pulse narrower A pulse shaper which produces an output pulse whose width is narrower, or whose duration is lesser, than the input pulse.

pulse operation Same as **pulse mode** (1).

pulse oscillator An oscillator, such as that producing pulsating current, whose output consists of pulses. Also called **pulsed oscillator**.

pulse period Same as **pulse interval**.

pulse-position modulation A form of modulation in which the timing of the pulses within a train is varied so as to convey meaningful information. Also called **pulse-interval modulation**.

pulse radar Same as **pulsed radar**.

pulse rate Same as **pulse repetition frequency**.

pulse regeneration 1. The process of restoring a pulse to its original form, amplitude, duration, or the like. 2. The process of restoring a pulse train to its original characteristics, such as timing.

pulse regenerator A circuit or device which effects **pulse regeneration**.

pulse repeater A circuit or device which retransmits pulses. Such a circuit or device may also perform pulse-forming functions, such as pulse stretching.

pulse repetition frequency The number of pulses emitted or occurring per unit time. Its abbreviation is **PRF**. Also called **pulse repetition rate**, **pulse rate**, or **pulse frequency**.

pulse repetition period Same as **pulse interval**.

pulse repetition rate Same as **pulse repetition frequency**. Its abbreviation is **PRR**.

pulse-repetition-rate modulation Same as **pulse-frequency modulation**.

pulse resolution For a circuit, device, or instrument, the minimum distance between input pulses that can be detected.

pulse rise time The time required for the amplitude of a pulse to increase from a given percentage of its peak amplitude, such as 10%, to another, such as 90%. **Pulse fall time** is the converse. Also called **rise time** (2).

pulse scaler A scaler that produces an output each time a given number of input pulses are received. For example, a decade scaler produces an output pulse for every ten input pulses.

pulse sensor Same as **pulse detector** (2).

pulse separation Within a pulse train, the time interval between the trailing edge of a pulse, and the leading edge of the next.

pulse sequence Same as **pulse train**.

pulse shape Same as **pulse form**.

pulse shaper A circuit or device which serves for **pulse forming**.

pulse shaping Same as **pulse forming**.

pulse-shaping circuit Same as **pulse-forming circuit**.

pulse-shaping line Same as **pulse-forming line**.

pulse-shaping network Same as **pulse-forming network**.

pulse spacing Same as **pulse interval**.

pulse stretcher A pulse shaper which produces an output pulse whose duration is greater than the input pulse.

pulse string Same as **pulse train**.

pulse stuffing The altering of the bit rate of a transmission so that it can be received at a different rate, without introducing errors. Also called **justification** (1), or **bit stuffing** (2).

pulse test Any test involving **pulses**. For instance, the applying of a pulse voltage to test a dielectric.

pulse-time modulation A form of modulation in which the timing of a given pulse, or pulse train, characteristic is varied so as to convey meaningful information. Examples include pulse-position modulation and pulse-duration modulation. Its abbreviation is **PTM**.

pulse train A series of pulses with similar characteristics, and which follow a regular recurrence pattern. Also called **pulse sequence**, **pulse string**, or **pulse group**.

pulse transformer A transformer specially designed to transfer pulses, essentially without changing their characteristics.

pulse transmission 1. Any form of transmission utilizing pulses. Examples include all forms of pulse modulation. 2. Transmission utilizing a pulse mode, as opposed to a continuous output.

pulse transmitter A transmitter utilized for **pulse transmission**.

pulse voltage A unidirectional surge of voltage of very short duration. It quickly rises to a maximum, then drops to zero in a similar fashion. Such a surge may be produced, for example, by a lightning stroke. Also called **impulse voltage**, or **impulse** (2).

pulse waveform The shape, such as rectangular or spiked, of a pulse.

pulse width A deprecated term for **pulse duration** (1).

pulse-width modulation A deprecated term for **pulse-duration modulation**. Its abbreviation is **PWM**.

pulsed Doppler radar A Doppler radar system in which RF energy is transmitted in pulses, as opposed to a **continuous-wave Doppler radar**, in which RF energy is emitted continuously.

pulsed laser A laser whose output consists of short bursts of light. Certain very powerful lasers, for instance, can generate pulses nearly in the zeptosecond range, and may be utilized to study activities in atomic nuclei.

pulsed light Light which is emitted in pulses, such as that produced by a pulsed laser.

pulsed operation A mode of operation in which circuits, devices, equipment, or systems utilize discrete pulses.

pulsed oscillator Same as **pulse oscillator**.

pulsed radar A radar which transmits pulses of RF energy. This contrasts with a **continuous-wave radar**, in which RF energy is emitted continuously. Also called **pulse radar**.

pulser Same as **pulse generator**.

pulses per second A unit of pulse repetition frequency, expressing the number of pulses produced or detected per second. For instance, the rate at which a laser delivers pulses, per second. Its abbreviation is **PPS**.

pulsing circuit A circuit serving as a **pulse generator**.

pump 1. In a parametric amplifier, an oscillator which varies a parameter, such as the capacitance or reactance, of the main oscillator. The resulting energy from this pumping action enables amplification of the input signal. Also called **pump oscillator**. 2. The signal provided by a **pump** (1). Also called **pump signal**. 3. To apply a **pump signal**. 4. In a laser, to excite electrons, molecules, or ions to higher energy levels, so as to initiate and sustain lasing action. Also, such to provide such excitation in a maser. Also, a device which provides such pumping.

pump frequency In a device such as a laser or parametric amplifier, the frequency at which pumping is provided. Also called **pumping frequency**.

pump laser A powerful laser utilized to drive an optical amplifier, or for other optical signal amplification.

pump oscillator Same as **pump** (1).

pump signal Same as **pump** (2).

pump voltage In a parametric amplifier, an alternating voltage provided by a **pump** (1).

pumping 1. In a laser, the excitation of electrons, molecules, or ions to higher energy levels, so as to initiate and sustain lasing action. Common methods utilized are the application of light, an electrical discharge, or through the effect of a chemical reaction. Also called **laser pumping**. 2. **Pumping** (1) in another device, such a maser or parametric amplifier.

pumping frequency Same as **pump frequency**.

punch 1. A tool utilized for stamping a design onto a surface, forcing an object or material into or out of a hole, or that pierces or cuts materials or objects. 2. A device which punches holes in **punched cards**.

punch-through In a bipolar junction transistor, a destructive discharge occurring when the collector-base voltage is sufficient for the collector space charge region to spread over the entire base region, coming in contact with the emitter region. Also spelled **punchthrough**.

punch-through voltage The voltage at which **punch-through** occurs. Also spelled **punchthrough voltage**.

punched card A card which holds 80 or 96 columns of data, each representing one character, used by computers with card readers. This is a practically obsolete storage medium. Also called **card** (3).

punched card reader A device which reads **cards** (3). Also called **card reader**.

punched card system A computer system in which **cards** (3) are used for input and output. Such systems are practically obsolete. Also called **card system**.

punched tape An obsolete form of data storage consisting of a long strip of paper, or another material, with holes punched.

punchthrough Same as **punch-through**.

punchthrough voltage Same as **punch-through voltage**.

puncture 1. A disruptive electrical discharge through an insulator, dielectric, or other material separating circuits. Also called **breakdown** (2). 2. A hole or depression made by a pointed object. Also, to make such a hole or depression.

puncture voltage The voltage at which a disruptive electrical discharge occurs through an insulator, dielectric, or other material separating circuits. Also called **breakdown voltage** (1).

Pupin coil One of multiple loading coils which are inserted in series with a telephone line, to reduce the effects of line capacitance.

pure color A color in which there is no white component present. Such a color has 100% saturation. Also called **saturated color**.

pure sine wave A sine wave with no distortion nor harmonics.

pure sound Same as **pure tone**.

pure tone A tone, such as that produced by striking a tuning fork, whose acoustic energy occurs at a single frequency. Such a tone would appear on an oscilloscope as a sine wave with little or no harmonic content. Also called **pure sound**, or **simple tone**.

pure wave A wave with no distortion nor harmonic content. An example is a pure sine wave.

purge 1. To remove any gases from an enclosure. 2. To remove any impurities from a substance or material. 3. To remove all data from memory, a storage medium, a file, or the like.

purging 1. The removal any gases from an enclosure. 2. The removal of any impurities from a substance or material. 3. The removal of all data from memory, a storage medium, a file, or the like.

purification The removal of impurities or other undesired constituents.

purify To remove impurities or other undesired constituents.

purity 1. The extent to which a substance, material, or the like, is free from impurities. 2. The extent to which a signal, waveform, data or the like, is free from distortion or errors. 3. The extent to which a color is not mixed with other colors. Said especially of a primary color which is not mixed with other primary colors. Also called **color purity** (2). 4. For a given color, the degree to which all unwanted components are excluded. Such a color only contains the proper proportion of the desired primary colors. Also called **color purity** (1).

purity adjustment The adjustment of the **purity** (4) of the displayed images of a CRT, using, for instance, a purity magnet.

purity coil A coil mounted around the neck of a CRT to adjust the **purity** (4) of the displayed images.

purity magnet A magnet mounted around the neck of a CRT to adjust the **purity** (4) of the displayed images.

purple plague A purplish compound formed when bonding gold to aluminum. The formation of such a compound may cause the failure of semiconductor devices or microelectronic circuits.

push 1. To add an item to the top of a stack. This contrasts with **pop**, which is to remove the first item from the top of a stack. 2. Same as **push technology**. 3. To send data utilizing **push technology**.

push-button Same as **pushbutton**.

push-button dialing Telephone dialing in which buttons are pressed to select numbers. Also spelled **pushbutton dialing**.