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guard ring 1. A metallic ring which is placed around a charged body, such as a terminal, and which serves to evenly distribute electric charge over the surrounded surface. 2. A **guard ring** (1) placed around one of the parallel plates of a capacitor to eliminate the edge effect.

guard-ring capacitor A capacitor with a **guard ring** (2) placed around one of its parallel plates to eliminate the edge effect.

guard shield A shielding enclosure surrounding all or part of the input circuit of an amplifier.

guard wire A grounded wire which is situated in a manner which allows it to catch and ground a high-voltage overhead transmission line in the event it breaks. Used as a safety precaution to protect persons or objects which could come in contact with such a line under these circumstances.

guarding The placement of low-impedance conductors at specific points in a circuit, so as to divert leakage currents.

Gudden-Pohl effect A light flash occurring when an electric field is applied to an ultraviolet-irradiated phosphor.

guest A user that logs onto a network or system without having registered or otherwise established an account. Guests typically have restricted access and/or privileges. Also called **visitor** (2).

guest account An account with restricted access and/or privileges provided to a **guest**. Also called **visitor account**.

guest password A generic password assigned to a **guest**. Also called **visitor password**.

GUI Acronym for graphical user interface, or graphic user interface. A user interface which utilizes displayed graphics to provide a simpler and more intuitive manner to interact with a computer. A GUI features a desktop, icons, dialog boxes, menus, buttons, and so on, which provide the choices available to a user at any given moment, and a pointing device such as a mouse or a stylus, so that the user may utilize them simply. Also called **graphical interface**, or **graphics interface**.

guidance Any process, mechanism, or system employed to direct the path of a robot or vehicle. The devices and/or equipment utilized for guidance may be onboard, or controlling signals may be sent from a remote site.

guidance computer A computer utilized for **guidance**. Usually refers to an onboard computer.

guidance system A system employed to direct the path of a robot or vehicle. The devices and/or equipment utilized for guidance may be onboard, or controlling signals may be sent from a remote site.

guide 1. A device which serves to direct along a given course. Also, that which serves to indicate, or to regulate operation. 2. A material medium whose physical boundaries confine and direct propagating electromagnetic waves. A guide, for instance, may be a hollow metallic conductor, a coaxial cable, a fiber-optic cable, or an atmospheric duct. Guides enable propagation of electromagnetic waves with very little attenuation. Also called **waveguide** (1). 3. A **guide** (2) consisting of a hollow metal tube, and which is utilized primarily for propagating microwave energy. The cross-section of such a tube may have any of various shapes, the most common being rectangular, circular, and elliptical. The waves are propagated along the longitudinal axis. Also called **waveguide** (2).

guided propagation The propagation of radio waves through an atmospheric duct. Also called **trapping**.

guided tour Online help in which a user is walked through each of the steps necessary to complete a given task.

guided wave A wave whose energy is confined to given boundaries. An example is a wave traveling in a waveguide.

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 **flap attenuator**.

guiltware Freeware, shareware, or the like, which has messages meant to make users feel guilty if they don't send money to the developers.

gull-wing lead On a chip package, a lead which extends out and down, so as to resemble a wing of a gull gliding. **J-leads** occupy less space.

gun Also called **electron gun**, or **electron-beam gun**. 1. A device which produces, and usually controls, an electron beam. Used, for instance, in CRTs, klystrons, electron microscopes, lasers, and for machining or drilling. 2. A **gun** (1) in a CRT. It incorporates a cathode which emits the electrons, a control grid, and accelerating and focusing electrodes.

Gunn diode A diode exhibiting the **Gunn effect**. Utilized, for instance, to produce microwave oscillations.

Gunn effect An effect observed in certain semiconductor crystals, in which oscillations at microwave frequencies are generated when a sufficiently high DC is applied. A small block of gallium arsenide, for instance, exhibits this effect.

Gunn oscillator An oscillator utilizing a **Gunn diode**.

gunzip Abbreviation of **GNU unzip**. A popular decompression utility.

GUT Abbreviation of **Grand Unified Theory**.

gutta-percha A natural rubber-like substance which is utilized for insulation of cables.

GV Abbreviation of **gigavolt**.

GW Abbreviation of **gigawatt**.

GWh Abbreviation of **gigawatt-hour**.

GWhr Abbreviation of **gigawatt-hour**.

Gy Abbreviation of **gray**.

gyrator A device which reverses the phase of a signal propagated in one direction, while causing no phase shift in signals propagated in the opposite direction. A gyrator is usually utilized in waveguides, and may or may not incorporate active devices.

gyro Abbreviation of **gyroscope**.

gyro horizon A **gyroscope** used to indicate the position of an aircraft with respect to a horizontal reference, usually the horizon.

gyrocompass A compass incorporating a **gyroscope**. Such a compass is not affected by magnetic variations, and provides an accurate line of reference for ships, aircraft, or the like. Also called **gyroscopic compass**.

gyrofrequency The angular frequency of the orbit of a particle orbiting along an axis which is perpendicular to a uniform magnetic field. Also called **cyclotron frequency** (3).

gyromagnetic Pertaining to the magnetic properties of rotating charged particles, such as electrons surrounding the nuclei of atoms.

gyromagnetic effect The rotation induced in a body whose magnetization is changed. Similarly, the magnetization induced in a rotating body. It is a weak effect, and contributes slightly to the earth's magnetic field.

gyropilot An automatic pilot incorporating one or more **gyroscopes**.

gyroscope A mechanical device consisting of a heavy spinning wheel mounted on a gimble. The spinning wheel maintains the same orientation in space, regardless of how the base is turned. When mounted on a double gimbal it is free to rotate in three mutually perpendicular axes. Used for

- Auger electron spectroscopy** An analytical technique which analyzes Auger electrons expelled from the surface of a solid which has been irradiated with particles such as electrons or photons. Utilized, with high spatial resolution, to determine the distributions of the elements composing the surface of the solid. Its abbreviation is **AES**.
- Auger transition** The energy transition of an electron within an atom undergoing the **Auger effect**.
- augmentative and alternative communication** Technology which enables those with special needs in communication, such as individuals with reduced vision, hearing, and/or motor function, to correspond, share, learn, teach, and otherwise communicate more effectively. Its abbreviation is **AAC**.
- augmented reality** An environment or setting which combines virtual and real images and objects. For example, virtual images may be superimposed upon real objects. Also called **augmented virtuality**, **mixed reality**, or **enhanced reality**.
- augmented virtuality** Same as **augmented reality**.
- AUI** Abbreviation of **attachment unit interface**.
- AUP** Abbreviation of **acceptable use policy**.
- aural masking** Same as **audio masking**.
- aural signal** 1. A signal that is within the range of frequencies that humans can hear. 2. The audio portion of a TV signal.
- aural transmitter** Same as **audio transmitter**.
- aurora** A luminous phenomenon of the upper atmosphere occurring mostly in the high latitudes of both hemispheres. That is, around the north and south magnetic poles. In the northern hemisphere auroras are called **aurora borealis**, or northern lights, and in the southern hemisphere they are called **aurora australis**, or southern lights. They are caused by the interaction of excited particles from space with particles of the upper atmosphere. Auroras can take any of several forms, such as arcs, bands, or patches, and usually affect radio communications.
- aurora australis** An aurora occurring in the southern hemisphere. Also called **southern lights**.
- aurora borealis** An aurora occurring in the northern hemisphere. Also called **northern lights**.
- auroral absorption** The absorption of radio waves by an aurora. This causes a fadeout of radio communications.
- auroral activity** The interaction of excited particles from space and particles of the upper atmosphere during an aurora. It usually affects radio communications.
- auroral electrojet** Multimillion ampere currents that flow in the auroral region. They are in the shape of a large oval, and are centered over the magnetic poles.
- auroral event** The occurrence of an **aurora**.
- auroral oval** Same as **auroral region**.
- auroral propagation** Propagation of radio waves which are reflected off an aurora. Such waves are usually in the very-high frequency range.
- auroral reflection** Radio waves which are reflected off an aurora. Such waves are usually in the very-high frequency range.
- auroral region** An oval-shaped region over a magnetic pole where an aurora appears. During large magnetic storms this region expands greatly. Also called **auroral oval**.
- auroral zone** A zone where auroras are most common, which is usually around the north and south magnetic poles.
- authentication** In computers and communications, the process of verifying the legitimacy of a transmission, user, or system. Measures such as passwords and digital signatures
- authentication token** An object or device, such as a smart card, which serves to authenticate a user in order to gain access to a computer network. Such a card, for instance, may be inserted into a smart card reader, with the holder prompted for a password or PIN for added security. Also called **security token**.
- authoring programs** Same as **authoring software**.
- authoring software** Software that facilitates the development of learning and teaching materials with significantly less programming than if a programming language were used, or with no programming at all. May serve, for instance, to create Web sites, or multimedia presentations. Also called **authoring programs**, or **authoring system**.
- authoring system** Same as **authoring software**.
- authorization** In computers and networks, the granting of access to resources to an individual which has provided a valid combination of user name and password, or its equivalent.
- authorization code** A sequence of characters which serve as a password, or its equivalent, to obtain access to a computer or network.
- auto-** A prefix used in words pertaining to that which is automatic, or which acts or occurs from within. For example, **autoalarm**, or **autopilot**.
- auto-alarm** Abbreviation of **automatic alarm**.
- auto answer** Abbreviation of **automatic answering**. A feature which allows a modem to answer an incoming call automatically. Once done, it attempts to establish the connection. Its own abbreviation is **AA**. Also spelled **autoanswer**.
- auto answering** Same as **auto answer**.
- auto attendant** A computerized system which automatically answers calls, routes them, and takes messages. It incorporates voice prompts, often has extensive memory for messages, and may include voice-recognition. Also spelled **autoattendant**.
- auto baud detect** A feature which allows a modem to sense the speed of the calling modem, and to configure itself accordingly. Also spelled **autobaud detect**.
- auto bias** Abbreviation of **automatic bias**.
- auto bypass** 1. In a network, the capacity to automatically bypass a terminal or device which is not functioning properly. This allows the working components to continue operation with a minimum of disruption. 2. The capacity to automatically bypass a malfunctioning component within a device. This allows the working components to continue operation with a minimum of disruption, especially if there is redundancy.
- auto call** Same as **autodial**.
- auto complete** Same as **autocomplete**.
- Auto Correct** Same as **AutoCorrect**.
- auto dial** Same as **autodial**.
- auto-ionization** Same as **Auger effect**.
- auto-load** Same as **automatic loading**.
- auto logon** Same as **autologon**.
- auto-negotiate** Same as **autonegotiate**.
- auto-pilot** Same as **automatic pilot**.
- auto play** Same as **autoplay**.
- auto polling** Same as **autopolling**.
- auto ranging** Same as **autoranging**.
- auto redial** A feature which allows a device, such as a telephone or modem, to automatically dial the last entered telephone number, or one that has been programmed into its