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

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

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

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

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

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

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

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

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

induced potential Same as **induced voltage**.

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

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

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

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

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

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

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

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

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

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

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

inductance coil Same as **inductor**.

inductance loss Same as **induction loss**.

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

inductance transducer Same as **inductive transducer**.

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

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

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

induction charge Same as **induced charge**.

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

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

induction current Same as **induced current**.

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

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

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

change information. 2. Same as **pager** (2). 3. The mechanism utilized for **paging** (1).

paint program An application which enables the creation of drawings in the form of bitmaps. In a **drawing program**, drawings are created utilizing vector graphics, so picture objects may be created and manipulated as independent objects. An **image editor** is an application which has many advanced tools to modify bitmapped images.

Painter A popular paint program.

pair 1. Two of anything. 2. Two items which correspond to each other. For example, Cooper pairs, electron-hole pairs, or Darlington pairs. 3. A transmission line consisting of two similar conductors. For example, a two-wire circuit, or a two-wire telephone line. Also called **wire pair**. 4. Two valence electrons which are shared by two adjacent atoms. Each pair of such electrons forms a bond between said atoms. Also called **electron pair**.

paired cable A cable consisting of one or more **pairs** (3). The conductors of such a cable are usually twisted or braided together, which case they are called **twisted pair**. Used, for instance, for telephone communications. Also called **twin cable**.

pairing 1. The creation or matching of a **pair**. 2. In TV, an image defect in which even and odd scan lines overlap, reducing vertical resolution.

PAL 1. Acronym for **phase-alternating line**, **phase-alternation line**, or **phase-alternate line**. A standard for the generation, transmission, and reception of TV signals. It provides for a resolution of 625 horizontal lines per frame, with 50 interlaced half-frames per second for a total of 25 frames per second. Of the 625 total lines, approximately 576 are active, while the aspect ratio is 4:3. In PAL, the phase of certain color information is inverted from scan line to scan line, so as to minimize phase distortion. PAL is used throughout most of Europe and many countries around the world, such as China and Brazil, while the other two main world standards are NTSC and SECAM. All three are mutually incompatible. Also called **PAL standard**. 2. Acronym for **programmable array logic**.

PAL signal Abbreviation of **phase-alternating line signal**, **phase-alternation line signal**, or **phase-alternate line signal**. A TV signal adhering to the **PAL Standard**.

PAL standard Abbreviation of **phase-alternating line standard**, **phase-alternation line standard**, or **phase-alternate line standard**. Same as **PAL** (1).

palladium A silver-white chemical element whose atomic number is 46. It does not tarnish in air, and when finely divided can absorb about 900 times its own volume of hydrogen. It has about 30 known isotopes, of which 6 are stable. Its applications in electronics include its use in electric contacts, relays, switches, lasers, and superconductors. Its chemical symbol is **Pd**.

palletize In robotics, to place parts in different positions within pallets or trays.

palletizing In robotics, the placing of parts in different positions within pallets or trays.

Palm A popular PDA.

palm-top Same as **palmtop**.

palm-top computer Same as **palmtop**. Also spelled **palm-top computer**.

palmtop A computer which is small enough to hold in a hand or place in a pocket. Such computers generally have a specialized operating system, and provide an interface to communicate with other computers, such as desktop systems. There are many types, including models which are industry-specific, such as those utilized by transport companies to keep track of shipments, those that provide only email func-

tions, or PDAs. Also spelled **palm-top**. Also called **palm-top computer**, **pocket computer**, or **handheld computer**.

palmtop computer Same as **palmtop**. Also spelled **palm-top computer**.

PAM Acronym for **pulse-amplitude modulation**.

pan 1. To perform a **panoramic sweep**. 2. To move a movie or TV camera in a horizontal and/or vertical plane, so as to create a panoramic view. In this context it is an abbreviation of **panorama** or **panoramic**.

PAN Abbreviation of **Personal Area Network**.

pan adapter Abbreviation of **panoramic adapter**.

pan-and-scan The conversion of an image source whose aspect ratio is 16:9, to a ratio of 4:3. Used, for instance, to present motion pictures on a TV with a 4:3 aspect ratio. In the process, a significant amount of picture information is lost. Its abbreviation is **pan & scan**.

pan & scan Abbreviation of **pan-and-scan**.

panadapter Abbreviation of **panoramic adapter**.

pancake coil A coil that is in the form of a disk. Its winding is flat, as opposed to cylindrical. Also called **pancake winding**, or **disk coil**.

pancake winding Same as **pancake coil**.

panel Also called **panel board**. 1. A rigid surface, sheet, or board upon which multiple indicators and devices, such as switches and dials are mounted, so as to enable a user to monitor and control a system. Used, for instance, to control an aircraft. Also called **control panel** (1). 2. A surface, sheet, or board upon which instruments and/or their indicators are mounted. Also called **instrument panel**. 3. A rigid surface, sheet, or board which serves to protect, cover, or hide. For example, that on the back of an instrument or device. Such a panel often has connectors, controls, and so on. 4. A device usually consisting of multiple solar cells which are connected to produce a given power output. Also called **solar panel**.

panel board Same as **panel**.

panel 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 display**, **flat monitor**, **flat-panel display**, or **flat-panel monitor**.

panel indicator An indicator mounted on a **panel** (1) or **panel** (2).

panel light 1. A indicating light within a **panel** (1) or **panel** (2). For example, one which blinks to inform of a fault condition. 2. A light which illuminates the viewing surface of a **panel** (1) or **panel** (2). Such a light may also be located behind the viewing surface, or a specific indicator.

panel loudspeaker Same as **panel speaker**.

panel meter A meter mounted on a **panel** (1) or **panel** (2).

panel speaker 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 loudspeaker**, or **flat-panel speaker**.

panic button A button, switch, or other such device which serves to alert of imminent danger or of an emergency. For instance, in a home-security system, there may be several such buttons strategically located throughout the house, so that any individual can alert the monitoring station of an emergency.

panning 1. The movement of a radar beam so as to scan a wide area. 2. The movement of a camera in a horizontal and/or vertical plane, so as to create a panoramic

two regions of ionizing radiation which surround the planet earth, and which interact with its magnetic field. These belts are composed mostly of protons and electrons which originate from the solar wind which become trapped by the earth's magnetic field. These two belts extend from about 700 kilometers to beyond 50,000 kilometers, and their contained particles travel along the planet's lines of force. Also called **Van Allen radiation belt**.

radiation counter An instrument which registers and counts ionizing radiation, such as alpha rays, given off by radioactive entities. For example, a Geiger counter or a scintillation counter. Also called **radiation detector (1)**, **ionization counter**, **counter (3)**, or **particle counter**.

radiation counter tube An electron tube which registers ionizing radiation, such as alpha rays, and produces an output electric pulse which can be counted. For example, a Geiger-Müller tube. Also called **counter tube (3)**.

radiation damage 1. Damage to a semiconductor device, such as a transistor, as a consequence of exposure to ionizing radiation. An antirad material may be used, for instance, to help prevent such damage. 2. Damage to a component, circuit, device, piece of equipment, system, material, or the like, due to exposure to ionizing radiation.

radiation detector 1. Same as **radiation counter**. 2. A component, circuit, device, piece of equipment, system, material, or process which detects radiation.

radiation diagram A diagram representing how the intensity of a quantity varies as a function of direction and distance. Commonly refers to the transmitting or receiving effectiveness of an antenna, and can be described in any plane, although the horizontal and/or vertical planes are generally used. Also called **directional diagram**, **directivity diagram**, or **field diagram**.

radiation dose The amount of ionizing radiation incident upon, or absorbed by, a given mass, volume, or body. May be expressed in roentgens, rems, rads, or reps. Also called **radiological dose (2)**, **dosage**, or **dose**.

radiation efficiency For an antenna, device, piece of equipment, or system, the ratio of the power radiated to the power consumed.

radiation excitation 1. Excitation of particles, atoms, or molecules by ionizing radiation. 2. Excitation of particles, atoms, or molecules by electromagnetic radiation.

radiation exposure 1. The condition or state of not being shielded, or otherwise protected, from radiation, especially ionizing radiation. 2. An act or circumstance which results in being exposed to radiation. 3. The quantity or extent of **radiation exposure (2)**.

radiation field For a radiator, such as a transmitting antenna, the portion of the electromagnetic field which is propagated outward as electromagnetic waves. This contrasts with the **induction field (2)**, which behaves as if permanently associated with said radiator.

radiation filter 1. An element or device, such as a disk or plate of plastic or glass, which selectively blocks or absorbs one or more intervals of frequencies of radiation. 2. An element or device, such as a disk or plate of plastic or glass, which selectively blocks or absorbs one or more intervals of frequencies of electromagnetic radiation, such as light. The optical properties of the element or device determine which frequencies pass, and which are blocked or absorbed. Also called **filter (4)**, or **optical filter**.

radiation hardened That which has undergone **radiation hardening**.

radiation hardening 1. Techniques utilized to enhance the resistance of components, circuits, devices, equipment, systems, and materials to ionizing radiation. Also, the additional resistance so obtained. 2. Techniques utilized to enhance the resistance of components, circuits, devices,

equipment, systems, and materials to electromagnetic radiation. Also, the additional resistance so obtained.

radiation hazard A possible source of danger to components, circuits, devices, equipment, systems, or personnel, resulting from radiation exposure.

radiation intensity 1. The magnitude of a given radiation. 2. For a given antenna, the power radiated per unit solid angle. 3. For a source of radiant energy, the power radiated per unit solid angle.

radiation ionization 1. Ionization of atoms or molecules by ionizing radiation. For instance, the ionization of the mercury vapor present in a gas tube. 2. Ionization of atoms or molecules by electromagnetic radiation.

radiation lobe Within the directional pattern of an antenna, a three-dimensional section in which radiation is increased.

radiation loss Any losses, such as RF or heat energy, due to radiation. Also called **radiation losses**.

radiation losses Same as **radiation loss**.

radiation monitor A component, circuit, device, piece of equipment, system, material, or process utilized to monitor ionizing radiation. Such a monitor may be equipped with a mechanism, such as an alarm, to indicate when exposure exceeds a given threshold.

radiation noise Radiation, especially electromagnetic radiation, producing noise in a circuit, device, piece of equipment, or system.

radiation pattern A pattern representing how the intensity of a quantity varies as a function of direction and distance. Commonly refers to the transmitting or receiving effectiveness of an antenna, and can be measured in any plane, although the horizontal and/or vertical planes are generally used. Also called **directivity pattern**, or **field pattern**.

radiation physics The science that deals with **radiation**, especially ionizing radiation, and the effects it has on matter.

radiation pressure 1. The very slight pressure that electromagnetic radiation exerts upon a surface. 2. The pressure that a sound wave exerts upon a surface.

radiation pyrometer Same as **radiation thermometer**.

radiation resistance For a given antenna, the radiated power divided by the square of the effective current, measured at the feed point.

radiation scattering The scattering of radiation due to interactions or collisions with particles. For example, atmospheric scattering, Bragg scattering, or multiple scattering.

radiation shield 1. A material or enclosure which limits or blocks the effects of radiation, such as ionizing radiation. Also called **radiation shielding (1)**. 2. A **radiation shield (1)** which serves to confine radiation within an enclosure. Used, for instance, to help minimize or prevent electromagnetic interference which may affect other devices or systems. Also called **radiation shielding (2)**.

radiation shielding 1. Same as **radiation shield (1)**. 2. Same as **radiation shield (2)**. 3. The use of a **radiation shield (1)**, or **radiation shield (2)**.

radiation source 1. Any source, such as a nucleus or particle accelerator, of ionizing radiation. 2. Any source of **radiation**.

radiation therapy Same as **radiotherapy**.

radiation thermometer An instrument or device, such as an infrared thermometer, which measures the radiation emitted by a body to determine its temperature. It is a type of non-contact thermometer. Also called **radiation pyrometer**.

radiation zone The region in which the transmitted energy from an antenna behaves as if it were emanating from a point source in the vicinity of said antenna. Such a region usually begins at a distance of $2D^2/\lambda$ from the antenna, where D is the maximum overall dimension of said antenna,