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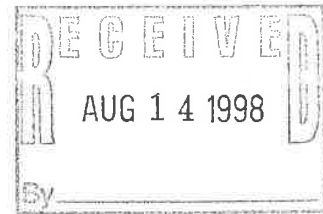
The IEEE Standard  
Dictionary of Electrical  
and Electronics Terms

Sixth Edition



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# The IEEE Standard Dictionary of Electrical and Electronics Terms

Sixth Edition

Standards Coordinating Committee 10, Terms and Definitions  
Jane Radatz, Chair

This standard is one of a number of information technology dictionaries being developed by standards organizations accredited by the American National Standards Institute. This dictionary was developed under the sponsorship of voluntary standards organizations, using a consensus-based process.

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## Introduction

Since the first edition in 1941 of the American Standard Definitions of Electrical Terms, the work now known as IEEE Std 100, The IEEE Standard Dictionary of Electrical and Electronics Terms, has evolved into the unique compendium of terms that it is today.

The current edition includes all terms defined in approved IEEE standards through December 1996. Terms are categorized by their technical subject area. They are also associated with the standards or publications in which they currently appear. In some cases, terms from withdrawn standards are included when no current source can be found. Earlier editions of IEEE Std 100 included terms from sources other than IEEE standards, such as technical journals, books, or conference proceedings. These terms have been maintained for the sake of consistency and their sources are listed with the standards in the back of the book.

The practice of defining terms varies from standard to standard. Many working groups that write standards prefer to work with existing definitions, while others choose to write their own. Thus terms may have several similar, although not identical, definitions. Definitions have been combined wherever it has been possible to do so by making only minor editorial changes. Otherwise, they have been left as written in the original standard.

Users of IEEE Std 100 occasionally comment on the surprising omission of a particular term commonly used in an electrical or electronics field. This occurs because the terms in IEEE Std 100 represent only those defined in the existing or past body of IEEE standards. To respond to this, some working groups obtain authorization to create a glossary of terms used in their field. All existing, approved standard glossaries have been incorporated into this edition of IEEE Std 100, including the most current glossaries of terms for computers and power engineering.

IEEE working groups are encouraged to refer to IEEE Std 100 when developing new or revised standards to avoid redundancy. They are also encouraged to investigate deficiencies in standard terms and create standard glossaries to alleviate them.

The sponsoring body for this document was Standards Coordinating Committee 10 on Definitions (SCC10), which consisted of the following members:

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**transmitted light scanning** The scanning of changes in the magnitude of light transmitted through a web. *See also:* photoelectric control. (IA) [60]

**transmitted wave (1) (A) (radio-wave propagation)** For a wave incident upon the boundary surface between two media, that part of the wave that enters the second medium from the first medium. **(B) (radio-wave propagation)** The wave launched by a transmitting antenna. *See also:* refracted wave. (AP) 211-1990

**(2) (waveguide)** At a transverse plane in a transmission line or waveguide, a wave transmitted past a discontinuity in the same direction as the incident wave. *See also:* reflected wave. (MTT) 146-1980w

**(3) A wave (or waves) produced by an incident wave that continue(s) beyond the transition point.** (CAS) [84]

**transmitter (1) (protective signaling)** A device for transmitting a coded signal when operated by any one of a group of actuating devices. *See also:* protective signaling. (EEC/PE) [119]

**(2) (radio)** A device or circuit that generates high-frequency electric energy, controlled or modulated, which can be radiated by an antenna.

(PE/SWG) C37.100-1992, C37.90.2-1995

**transmitter-blocker cell (antitransmit-receive tube) (with reference to a waveguide).** A gas-filled waveguide cavity that acts as a short circuit when ionized but as an open circuit when un-ionized. It is used in a transmit-receive switch for directing the energy received from the aerial to the receiver, no matter what the transmitter impedance may be. *See also:* waveguide. (AP) [35]

**transmitter, facsimile** The apparatus employed to translate the subject copy into signals suitable for delivery to the communication system. *See also:* facsimile. (COM) 168-1956w

**transmitter on/transmitter off** An asynchronous protocol that synchronizes the receiving terminal with the sending terminal (C) 610.7-1995

**transmitter performance** *See:* audio input power; audio input signal.

**transmitter, telephone** *See:* telephone transmitter.

**transmitting (transmission performance of telephone sets)** The electric output level of a telephone set or connecting test circuit due to an acoustic input to the telephone set. The acoustic input may be varied either in frequency or level. The output is measured across a specified impedance and the input is measured at the calibration point of an artificial mouth. (COM) 269-1983s

**transmitting converter (facsimile) (amplitude-modulation to frequency-shift-modulation converter)** A device which changes the type of modulation from amplitude to frequency shift. *See also:* facsimile transmission. (COM) 168-1956w

**transmitting current response (electroacoustic transducer used for sound emission)** The ratio of the sound pressure apparent at a distance of one meter in a specified direction from the effective acoustic center of the transducer to the current flowing at the electric input terminals. *Note:* The sound pressure apparent at a distance of one meter can be found by multiplying the sound pressure observed at a remote point (where the sound field is spherically divergent) by the number of meters from the effective acoustic center of the transducer to that point. (SP) [32]

**transmitting efficiency (electroacoustic transducer) (projector efficiency).** The ratio of the total acoustic power output to the electric power input. *Note:* In computing the electric power input, it is customary to omit any electric power supplied for polarization or bias. (SP) [32]

**transmitting loop loss** That part of the repetition equivalent assignable to the station set, subscriber line, and battery supply circuit that are on the transmitting end. *See also:* transmission loss. (EEC/PE) [119]

**transmitting objective loudness rating (loudness ratings of telephone connections)**

$$\text{TOLR} = -20 \log_{10} \frac{V_T}{S_M}$$

where

$S_M$  = sound pressure at the mouth reference point (in pascals)

$V_T$  = output voltage of the transmitting component (in millivolts).

*Note:* Normally occurring TOLRs will be in the -30 to -55 (dB) range. These numbers are a result of the units chosen and have no physical significance. (COM) 661-1979r

**transmitting power response (electroacoustic transducer used for sound emission) (projector power response)** The ratio of the mean-square sound pressure apparent at a distance of one meter in a specified direction from the effective acoustic center of the transducer to the electric power input. *Note:* The sound pressure apparent at a distance of one meter can be found by multiplying the sound pressure observed at a remote point (where the sound field is spherically divergent) by the number of meters from the effective acoustic center of the transducer to that point. (SP) [32]

**transmitting voltage response (electroacoustic transducer used for sound emission)** The ratio of the sound pressure apparent at a distance of one meter in a specified direction from the effective acoustic center of the transducer to the signal voltage applied at the electric input terminals. *Note:* The sound pressure apparent at a distance of one meter can be found by multiplying the sound pressure observed at a remote point (where the sound field is spherically divergent) by the number of meters from the effective acoustic center of the transducer to that point. (SP) [32]

**transobuoy (navigation aids)** A free floating or moored automatic weather station providing weather reports from the open ocean. (AE) 172-1983w

**transparency** A capability of a communications medium to pass within specified limits a range of signals having one or more defined properties, for example, a channel may be code transparent, or an equipment may be bit pattern transparent. (COM/LM) 168-1956w

**transparent (A)** In data transmission, pertaining to information that does not contain transmission control characters. **(B)** To perform in a manner that is invisible to, and of no concern to a user. For example, a computer program may perform file allocation, database operations, and housekeeping operations transparent to its user. (C) 610.5-1990

**transparent bridging** A bridging mechanism in a bridged LAN that is transparent to the end stations. (C/LM) 8802-5-1995

**transparent latch** A latch that has a level sensitive trigger input such that when the trigger signal is in the 'enable' state the outputs follow the inputs, and when the trigger signal goes to the 'latch' state the outputs retain the data then at the inputs. (C) 610.10-1994

**transponder (1) (navigation aid terms)** A transmitter-receiver facility, the function of which is to transmit signals automatically when the proper interrogation is received. (AE) 172-1983w

**(2) (communication satellite)** A receiver-transmitter combination, often aboard a satellite, or spacecraft, which receives a signal and retransmits it at a different carrier frequency. Transponders are used in communication satellites for radiating signals to earth stations or in spacecraft for returning ranging signals. *See also:* repeater. (COM) [24]

**(3) (broadband local area networks)** A device that responds to a physical or electrical stimulus and emits an electrical signal in response to the stimulus. (C/LM) 802.7-1989

**(4)** A receiver-transmitter facility, the function of which is to transmit signals automatically when the proper interrogation is received from a radar. (AE) 686-1990w