

## HDTV & TV Dictionary

**AC-3:** see *Dolby Digital*.

**active scan lines:** Those scan lines in a video *frame* that carry picture information rather than being used for other data (such as *closed captioning*) or for synchronization.

**analog:** A type of component or recording medium that operates with continuously varying waveforms that are directly analogous to the signals they represent; see *digital*.

**anamorphic:** A means of recording a *widescreen* image using special lenses or processing such that the image is distorted in the medium but restored to proper proportions during playback.

**aperture grille:** see *shadow mask*.

**aspect ratio:** The ratio of width to height of a screen or image; expressed in whole numbers (4:3, 16:9) or divided out (1.33, 1.78).

**ATSC (Advanced Television Systems Committee):** The industry/government body that issued the U.S. *digital TV* standard.

**audio/video (A/V):** Any system or component that involves both audio and video elements, like a *receiver* or a preamplifier that also switches video signals and processes *multichannel* audio signals (including *surround sound decoding*) for a *home theater system*.

**bit:** The basic unit of information in digital audio or video, corresponding to on or off, 1 or 0; a contraction of "binary digit."

**bit rate:** The rate of transmission of digital data of any type, measured in bits per second (see *data rate*). A stated bit rate may or may not include data for formatting, synchronization, and so on in addition to the audio or video data making up the program material.

**bitstream:** A *signal* that contains digital data in its undecoded state; often referring to the SPDIF output from a DVD, which carries PCM, *Dolby Digital*, or DTS signals.

**black-level control:** On a video monitor, a control that adjusts the amount of light put out by the display when it receives the video signal for black (often called the "brightness" control).

**black-tint picture tube:** A *CRT* in a direct-view TV whose glass has been tinted black in order to heighten *contrast* in the displayed image.

**blue minus luminance (B - Y):** Part of a *component-video* signal; see *color difference*.

**BNC connector:** A bayonet-type *coaxial* connector commonly used on laboratory instruments.

**brightness:** see *black-level control*.

**carrier:** A high-frequency sine wave whose alterations in amplitude, frequency, or phase are used to convey (carry) the information in a much lower-frequency signal or band of signals.

**chip:** An integrated circuit, so called because it usually is a small piece of silicon chipped off a larger "wafer."

**chrominance (chroma, C):** A video signal carrying only the point-to-point color, both hue and saturation, of a video image and not its brightness; see *luminance*.

**closed captioning:** A system that transmits caption or subtitle text and symbol data during the nonimage portion of a video signal. It requires special decoder circuitry for display, hence the "closed."

**coaxial:** A type of two-signal connector in which an inner conducting wire is surrounded by a shielding cylindrical outer conductor; commonly used in audio and video connections.

**codec:** Short for coder-decoder, a circuit or computer program designed to reduce the amount of digital data it takes to transmit an audio or video signal.

**color control:** A video-*monitor* adjustment that changes the amount of *chrominance* applied to the image; see *saturation*.

**color difference:** A system of transmitting video information in which the color signals contain the difference between a given primary color (red, blue, or green) and the *luminance* signal. The color information on DVDs and in *component-video* signals is encoded in this way.

**color temperature:** The specific shade of white produced by a video *monitor* in response to a pure-white (*luminance*-only) input signal, measured in degrees *kelvin*, or kelvins (K). Low color temperatures produce a "white" that's tinted reddish-orange compared with the bluish "white" at high color temperatures. The standard color temperature for *NTSC* video is 6,500 degrees kelvin.

**comb filter:** In video equipment, a circuit that separates the *chrominance* from the *luminance* signals contained in a *composite-video* signal.

**component:** A separate piece of audio or video equipment, with its own chassis and power supply, that performs one specific function or set of related functions.

**component video:** A method of transmitting video signals that continuously keeps the various color components separate from each other. Consumer component-video connections carry *luminance* and two *color-difference* signals; see *YCrCb* and *YPrPb*. A component-video connection is made via three separate, color-coded RCA jacks or a 15-pin VGA connector.

**composite video:** A single video signal that combines three video subsignals (*luminance*, *chrominance*, and *sync*). Until the development of *S-video* and *component-video* outputs, all video connections in consumer products were composite video. A composite-video connection uses a single RCA jack.

**compression:** A reduction of an audio signal's dynamic range or of the size of digital audio or video data files. Not all compression is bad: dynamics can be uncomfortably wide (soft sounds get lost in room noise, while loud sounds are deafening), and digital files can be much bigger than they need to be to convey enough information for many purposes.

**contrast:** In general, the range between the brightest and darkest parts of an image; on a video *monitor*, a control that adjusts the overall *gain* of the video signal on its way to the display.

**convergence:** Adjustments in a *CRT*-based projection monitor that align the primary-color images produced by the three internal *CRT*s. In a direct-view color TV, convergence refers to the alignment of the beams generated by the three *electron guns*.

**CRT (cathode-ray tube):** A tube in which electrons emitted by a hot cathode are focused into beams and scanned across a fluorescent screen to produce a picture.

**data rate:** The rate at which digital information is transmitted or received; in audio and video, the rate is typically measured in kilobits per second (kbps) or megabits per second (Mbps), but it can also be measured in bytes per second (there are 8 bits in a byte). Despite referring to digital data, "kilo" and "mega" here retain their normal metric meanings of 1,000 and 1,000,000, respectively, rather than 2<sup>10</sup> and 2<sup>20</sup>.

**decibel (dB):** The most commonly used measurement unit in audio, a decibel is a logarithmic unit expressing the ratio of two powers, currents, voltages, or sound-pressure levels (SPLs). An increase of 10 dB represents a tenfold increase in power, and an increase of 20 dB represents a tenfold increase in voltage.

**defeat:** To bypass the actions of a *signal processor*, tone controls, or other circuitry.

**de-interlacing:** The process of converting a *field*-based image (for example, the video on a *DVD*) to a *frame*-based image (as would be delivered from a *DVD* player's progressive-scan output).

**digital:** A digit is a number, and digital devices use numbers in some way. A digital tuner, for example, may use numbers only on its front-panel display, or it may use digital frequency-synthesis tuning circuits. Digits can also be used to represent analog signals, as in digital audio or video.

**digital filter:** A circuit that alters the frequency content of a waveform by arithmetic manipulation of its digital representation.

**Digital Light Processing (DLP):** A technology developed by Texas Instruments that uses a Digital Micromirror Device to project video signals.

**Digital Micromirror Device (DMD):** A chip whose surface is covered with more than half a million tiny movable mirrors. Used in the *DLP* system to create video projectors.

**digital output:** A *coaxial* or *fiber-optic* output found on some *CD* and *DVD* players and digital recorders that is used to send digital audio signals to a component with a digital input; see *SPDIF*.

**digital signal processing/processor (DSP):** A general term for the mathematical manipulation of signals that are in digital form. DSP can be used for a wide variety of tasks, including ambience enhancement, *equalization*, *filtering*, time-alignment, and noise reduction of audio and video signals. A digital signal processor can be either a separate *component* or a part of one.

**Digital Visual Interface (DVI):** A high-speed digital interface for visual data (both video and still images) that will increasingly be used to connect HDTV tuners and displays.

**digital TV (DTV):** Broadcasts of digital television signals in the U.S. following the set of standards issued by the *ATSC* specifying the 18 formats to be used. The most common high-definition (HDTV) formats are variants of 1080i (1,080 interlaced scan lines) and 720p (720 progressive scan lines), while the enhanced-definition (EDTV) formats all use 480 progressive scan lines (480p) and the standard-definition (SDTV) formats use 480 interlaced scan lines (480i). Though the EDTV and SDTV formats can have both *widescreen* (16:9) and conventional (4:3) aspect ratios, the HDTV formats are widescreen only.

**D-ILA (Direct-drive Image Light Amplifier):** A reflective liquid-crystal technology suitable for high-resolution displays, also known as LCOS (liquid crystal on silicon).

**direct-view TV:** Usually refers to a *CRT* set whose single picture tube is intended for viewing head on, not projecting onto a screen.

**distortion:** Broadly speaking, any unwanted alteration of a signal; usually, however, it refers to nonlinear distortion, which adds to the output signal components that are mathematically related to the input signal.

**Dolby Digital:** The Dolby Labs format for digital surround sound providing up to 5.1 channels; used in *DVDs*, the *digital TV* system, and some laserdiscs; formerly called AC-3 (for Audio Code 3).

**Dolby Digital EX:** A system of encoding a quasi-6.1-channel signal within the 5.1-channel framework of a standard Dolby Digital data stream. The sixth channel is encoded by a *matrix* technique on the left and right surround channels of the Dolby Digital signal. The first licensed decoding system is THX Surround EX, but some digital surround *receivers* and processors use an unlicensed matrix-decoding system for 6.1-channel playback.

**Dolby Pro Logic (DPL):** An enhancement to Dolby Surround decoding that extracts a center channel and improves channel separation by means of logic-steering circuitry. A new, enhanced version called Dolby Pro Logic II not only decodes Dolby Surround but can also manipulate a Dolby Surround-encoded or plain two-channel signal to simulate 5.1-channel playback, with separate modes optimized for music and movie soundtracks.

**Dolby Surround:** The consumer name for the Dolby Stereo system used for movie soundtracks. Dolby Surround encoding matrixes four channels - left, center, right, and surround - into two stereo-compatible channels (LT/RT) that can be carried on any two-channel sound medium. Basic Dolby Surround decoding extracts the single surround channel to feed a pair of speakers at the sides or back of the room; such decoders have now largely been superseded by Dolby Pro Logic decoders as well as by Dolby Digital systems.

**dot pitch:** The horizontal spacing between repetitions of the red, green, and blue *phosphor* pattern in a color *CRT*.

**DVD:** A high-capacity optical-disc format that enables vast amounts of audio, video, or computer data to be encoded on a laser-read disc the size of a CD.

**DVD-Video:** A DVD format used almost exclusively for movies and other image-intensive program material; it employs *MPEG-2* video encoding and *Dolby Digital* or *DTS* and *PCM* stereo audio encoding. Most movie DVDs offer up to 5.1 channels of *surround sound*, and today most come in *widescreen* format.

**EDTV:** see *enhanced-definition TV*.

**EDTV monitor:** A TV set that can display a 480p-format enhanced-definition *digital TV* signal when connected to an outboard tuner/decoder.

**electron gun:** A subassembly of a *CRT* that is responsible for generating and launching high-velocity electrons aimed at the *phosphors* on the inside face of the picture tube.

**electronic program guide (EPG):** An onscreen program guide/menu system that can be used to select the program to be viewed or to set the recording timer in a *VCR* or hard-disk recorder. Current schedule information is typically downloaded at night from the program service provider via a built-in modem connected to a telephone line.

**EnergyStar-compliant:** Adheres to a federal standard for efficient use of energy as certified by the Department of Energy and the Environmental Protection Agency.

**enhanced-definition TV (EDTV):** A subset of the *digital TV* (DTV) standard that is superior to *standard-definition TV* chiefly because it uses 480p (*progressive-scan*)

formats at up to 60 *fps* for display--with either a 16:9 or 4:3 *aspect ratio*--rather than SDTV's 480i (interlaced-scan), 30-fps formats.

**equalization (EQ):** Deliberate alteration of *frequency response*.

**equalizer:** A *component*, or part of a component, that divides the audio signal into *frequency bands* with separately adjustable output levels. See *graphic equalizer* (the most common type).

**Extended Data Service (XDS):** Text and other ancillary data included with a broadcast or cable TV signal, such as time checks, content ratings (see *V-chip*), station identification, and more; requires an *XDS-capable* receiver to display or use the information.

**fiber-optic:** A transmission medium in which signals are carried through a special plastic- or glass-fiber cable in the form of light; the primary benefit is immunity to electrical noise. See *Toslink*.

**field:** A video image containing half of the scan lines of an interlaced *frame*.

**filter:** A circuit that boosts, attenuates, or removes selected *frequencies* from signals.

**FireWire:** see *IEEE 1394*.

**first-surface mirror:** A mirror whose reflective coating is on the top, the first surface the light hits, unlike the typical "second surface" mirror; used in *rear-projection TVs*.

**5.1-channel:** The conventional designation for a medium or system that carries six channels of sound information: front left/center/right, surround left/right, and a restricted-bandwidth (hence the ".1") *LFE* channel that carries only deep bass.

**flat:** Applied to *frequency response*, a condition in which all input *frequencies* emerge from the device or medium with the same relative levels as when they entered. Also a setting, as of an *equalizer* or tone control, that results in a flat frequency response.

**4:3, 4x3:** see *aspect ratio*.

**frame:** A complete, individual picture on a motion-picture film or contained in a video signal.

**frame rate:** The rate at which frames are displayed. In typical modern movies the frame rate is 24 per second; in color NTSC video it is 30 per second.

**frequency:** Rate of vibration or oscillation, measured in cycles per second, or hertz (Hz).

**frequency response:** The range of *frequencies* (or bandwidth), expressed in *hertz* (Hz), that a *component* can handle, within specified limits of amplitude error, expressed in *decibels* (dB).

**front projector:** A type of video display in which a trio of *CRTs* (red, blue, and green) is housed in a separate unit, not connected to the screen, much like a movie projector; front projectors are often mounted on the ceiling.

**gain:** The amount by which the amplitude of incoming signals is changed by a circuit or antenna, usually expressed in *decibels* (dB). Gain can be positive, for amplification; negative, for attenuation; or 0 dB for no change, or "unity gain."

**gamma:** A numerical characterization of the nonlinearity of video transducers (image sensors, *CRTs*, *LCDs*, *DLPs*) that indicates how much their output values differ from the expected values with a given range of inputs.

**giga (G):** The metric prefix for billion. In reference to digital data, giga usually stands for 1,073,741,824.

**graphic equalizer:** An *equalizer* with control bands that are fixed in *frequency* but variable in level; the slider controls for the various bands provide a rough graphic representation of the selected *frequency-response* curve.

**graphical user interface (GUI):** Any "point-and-click" control system for an electronic *component* (*DVD* player, *A/V receiver*, etc.) that uses menus and icons displayed on a screen instead of (or in addition to) physical pushbuttons and other controls.

**HD-ready TV:** See *HDTV monitor*.

**HDTV monitor:** A TV set that can display full-resolution widescreen high-definition images when connected to an outboard *HDTV tuner*; see *EDTV monitor*.

**HDTV set:** An HDTV monitor that has a built-in high-definition *tuner*.

**HDTV tuner:** An outboard, usually set-top, *digital TV* tuner/decoder that can receive *high-definition TV* programs broadcast over the air as well as from a satellite receiver or cable service and then decode the signals for display in full resolution on a *widescreen* HDTV monitor.

**hertz (Hz):** The standard unit of *frequency*, representing cycles per second, or changes away from a basic state and back again. In audio, the basic state is defined as either ordinary air pressure (without sound) or its electrical equivalent: a constant-level (DC) signal, often 0 volts, or *ground*. For a sound in the audible range, the greater the frequency in hertz, the higher the pitch. In video, frequency usually relates to *horizontal luminance resolution*; the greater the frequency, the tinier the detail and the higher the resolution. A kilohertz (kHz) is a thousand hertz, a megahertz (MHz) a million hertz, and a gigahertz (GHz) a billion hertz.

**high-definition TV (HDTV):** A specific subset of the *digital TV* standard that features increased horizontal and vertical *resolution*, choice of *interlaced* or *progressive scan*, and *widescreen* images; see *enhanced-definition TV* and *standard-definition TV*.

**home theater system:** A collection of audio and video *components* designed and configured to reproduce something like the picture and sound quality that would be experienced from a movie in a good cinema. A home theater is generally expected to include a TV screen of reasonable size and a *surround sound* audio system. See also *Dolby Digital*, *Dolby Surround*, and *Dolby Pro Logic*.

**horizontal luminance resolution:** Measured in lines, this is the most common parameter for characterizing the reproduction of fine detail in video. (Do not confuse these "lines" with *scan lines*).

**hue:** A color's position in the visible spectrum from red to blue, or its gradation of tint; the professional name for a video *monitor's tint control*.

**IEEE 1394:** The Institute of Electrical and Electronics Engineers (IEEE) standard for high-speed, high-capacity digital connections of audio and video *components*, computers, and *peripherals*; also known as FireWire and i.Link.

**i.Link:** see *IEEE 1394*.

**infrared (IR):** Light whose wavelength is longer than visible red. "Near infrared" wavelengths close to the visible-light range are used by remote controls.

**integrated circuit (IC):** A miniature, one-piece, solid-state device containing many transistors and other electronic components; it is the basic building block of most modern electronics; see *chip*.

**interlaced scan:** A video component or signal that assigns alternating *scan lines* in a video *frame* to one of two *fields*, which are then displayed separately (the opposite of

*progressive-scan*). Interlacing reduces picture flicker without the transmission of additional video information. Interlaced scanning formats are designated by an "i," as in "480i" or "1080i."

**jack:** A female connector that serves as a receptacle for a male connector, or plug; see *RCA connector*.

**kelvin (K):** A unit on the Kelvin temperature scale, which is the same "size" as a degree on the centigrade/Celsius scale but starts from "absolute zero" rather than the freezing point of water.

**kilo (k):** The metric prefix for thousand. In reference to digital data, kilo usually stands for 1,024.

**kilobits per second (kbps):** A statement of bit rate or data-transfer speed, usually encountered in reference to downloaded music files in MP3 and other compressed formats.

**LCD (liquid-crystal display):** Color LCD panels are used in some flat-screen TVs and computer *monitors* as well as in some video-projection systems. Monochrome LCD readouts are used on the faceplates of some *A/V components* and remote controls.

**LCOS (liquid crystal on silicon):** A reflective liquid-crystal technology suitable for high-definition displays.

**LED (light-emitting diode):** A semiconductor device used as an indicator light on many *components*.

**lenticular:** In video, anything containing many small lenses; commonly used to describe video projection screens optimized to produce high picture brightness in certain viewing directions.

**letterboxing:** The scaling of a *widescreen* image to fit within a 4:3 *aspect ratio* screen by shrinking the image's vertical dimension so that the width fits exactly and filling the resulting spaces above and below the image with black bars. Critics of the technique contend that the screen area is being "wasted" by the letterboxing bars; see *pan-and-scan*.

**LFE (low-frequency effects) channel:** This is the ".1"-channel of a 5.1-channel *surround sound* system, containing only very low *frequencies* (below 150 Hz); in movie soundtracks it is used primarily for high-level sound effects.

**line doubler:** A device that doubles the number of *scan lines* in a video image; line triplers and line quadruplers are also available.

**line interpolation:** A process by which additional *scan lines* are synthesized out of the original scan lines present in a video image; used to increase the apparent vertical *resolution*; see *line doubler*.

**LNB (low-noise block downconverter):** A device mounted at the focal point of a satellite dish that amplifies the microwave signals collected by the dish and converts them to a lower frequency that can be sent to a satellite receiver over standard *coaxial* cable.

**logic:** In a *surround sound* system, "logic-steering" is used to improve separation between multiple channels derived from *matrix*-encoded two-channel signals.

**matrix:** A type of circuit commonly used in *surround sound* encoders and decoders to squeeze three or more channels of information into two or to extract multiple channels from an encoded two-channel signal (see *Dolby Digital EX*, *Dolby Pro Logic*, *Dolby Surround*); also used to describe similar circuits that can synthesize an *ambience* channel

from a nonencoded stereo recording. The term "matrix" derives from the mathematics involved.

**mega (M):** The metric prefix for million.

**microprocessor:** An integrated circuit containing a complete central processing unit (CPU) of a computer. A microcomputer is a complete computer (comprising a CPU, memory, and input/output circuitry) on a single IC chip.

**monitor:** In audio, a speaker used in recording or other professional applications; in video, the term can refer to any display device, including TVs, but is often used specifically to denote a display-only device without tuning functions.

**MPEG (Moving Picture Experts Group):** A committee of engineers and scientists formed to issue standards for data-compressed digital audio and video.

**MPEG-2:** The standard audio/video data-compression scheme for *digital TV*, *DVDs*, and certain digital satellite transmissions.

**MTS (multichannel television sound):** The encode/decode system devised by Zenith and dbx and used for *stereo analog* TV broadcasting in the U.S. An MTS decoder is built into all stereo TVs and *VCRs* sold in the U.S. Also see *SAP*.

**multichannel:** An audio system or component using more amplifier/speaker channels than a *stereo* pair. See *5.1-channel*, *6.1-channel*, *home theater system*, *Dolby Digital*, *Dolby Surround*, *Dolby Pro Logic*.

**noise:** Any unwanted signals that are not strongly correlated with the desired signal and that usually arise from a random process. Hiss and hum are typical examples of audible noise. In video programs, noise appears as "snow" on the screen or graininess in the image.

**NTSC (National Television System Committee):** The industry/government body that issued the U.S. *analog* color TV standard that was approved by the FCC (Federal Communications Commission) in 1953; thus, any video signal or *component* that operates according to that standard.

**optical (fiber-optic) input/output:** A special type of jack that accepts *fiber-optic* connectors; see *Toslink*.

**output level:** A measure of the strength of a *component's* output signal.

**PAL (phase-alternating line):** The *analog* TV standard for Western Europe except France (see *SECAM*) and much of the rest of the world except Japan and North America (see *NTSC*).

**pan-and-scan:** A technique for making a *widescreen* movie fill a 4:3 *aspect ratio* screen by showing only selected parts of the original image, recropped scene by scene to focus in on what seems most significant to the action; see *letterboxing*.

**phosphor:** A chemical lining the inside face of a CRT that glows when struck by electrons fired by an *electron gun*. Color CRTs have a repeating pattern of red, green, and blue phosphors (see *dot pitch*) named after the colors they emit when irradiated.

**picture-in-picture (PIP):** A TV function that allows the simultaneous display of two or more different programs on the same screen, usually with a small image of the secondary program(s) superimposed over that of the main program.

**pixel (picture element):** The smallest subunit of an image that is treated separately in a digital video system or in a non-CRT video display. Pixel counts are often quoted in specifications for *LCD* and *DLP* projection TVs; see *front projector* and *rear-projection TV*.

**plasma:** A type of video display that employs an enormous array of tiny cells of ionized gas (plasma), which is used to activate each cell's colored *phosphor*.

**preset:** A memory circuit in a *component* that is programmed by the user. For example, *tuner* presets store the *frequencies* of radio or TV stations.

**progressive scan:** A video *component* or signal that processes or displays each *scan line* of a video *frame* in sequence; the opposite of *interlaced scan*.

**radio-frequency (RF):** The high-frequency electromagnetic signals used to broadcast radio and TV programs, or any very high-frequency signal, whether intended for broadcast or not.

**RCA connector/plug/jack:** The most common kind of audio connector, using a small, single-pin plug and a *coaxial* shield.

**rear-projection TV (RPTV):** A TV set that beams the output of three *CRTs* (red, green, and blue) in the rear of a cabinet onto an angled mirror, which in turn reflects it onto a large screen (from 40 to 80 inches diagonal) at the front of the cabinet.

**receiver:** An audio or audio/video *component* that receives radio broadcasts, switches and processes audio signals, and amplifies the selected signal to drive speakers. A television receiver is a *monitor* that contains a *tuner* for TV signals.

**red, green, and blue (RGB):** The three primary colors of most video systems (such as *NTSC* and *DTV*); also, the three color signals used by computer *monitors*. An RGB video connection (usually RGB plus sync, or RGB+H/V) provides each color as a discrete signal.

**red minus luminance (R - Y):** Part of a *component-video* signal; see *color difference*.

**resolution:** A measure of the ability of a video system to convey fine image details. Most resolution specifications or measurements are for *horizontal luminance resolution*, but there can be vertical luminance and color resolution figures as well.

**RF interference (RFI):** When a radio or TV broadcast or other *radio-frequency* signal interferes with the operation of a *component*.

**RGB+H/V:** see *red, green, and blue*.

**RS-232:** A standard for serial communications ports on computers and some A/V *components*.

**SAP (secondary audio program):** A separate *mono* channel broadcast along with the two *stereo* channels in the *MTS* system for *stereo analog* TV. The SAP channel can be used for various purposes, such as an alternative soundtrack in a different language.

**saturation:** In video, saturation is the intensity of a color, specifically defined as its "distance" from white (for example, a lightly saturated pink vs. a deeply saturated red); also, the professional name for a video *monitor's color control*.

**scaler:** A circuit or *digital signal processing* program that converts a video signal from one image format to another (for instance, from 480i to 720p).

**scan doubler:** see *line doubler*.

**scan line:** In the *NTSC* video system, one of the 525 thin horizontal strips that together make up a complete *frame*. Only 480 of the lines actually carry video information.

**scan-velocity modulation:** In a video *monitor*, a technique for improving the apparent sharpness of an image by varying the rate at which a scanning electron beam sweeps across the face of a *CRT*.

**SDTV:** see *standard-definition TV*.

**SDTV monitor:** A TV set that can display a 480i-format standard-definition *digital TV* signal when connected to an outboard *tuner/decoder*.

**SECAM (sequential colour avec memoire):** The broadcast TV standard in France and much of the former Eastern Bloc; see *PAL* and *NTSC*.

**set-top box:** Any of several types of decoder, such as for cable TV, *digital TV*, or Internet functions, designed for hookup to an HDTV/EDTV *monitor*, a cable-TV feed, and so on.

**shadow mask:** A sheet of metal perforated with thousands of tiny holes that are aligned with the *electron guns* within a color *CRT*; the purpose is to prevent the electron beam for one color from hitting the *phosphors* of another.

**sharpness control:** A video-*monitor* control that affects the mid to high *frequencies* of the *luminance* signal, which convey the subjective impression of sharpness.

**signal:** An electromagnetic wave, current, or *voltage* whose variations carry audio or video information.

**6.1-channel:** Any system that has provisions for a back surround channel in addition to the conventional left and right surround channels of a *5.1-channel* system.

**16:9, 16x9:** see *aspect ratio*.

**Sony/Philips Digital Interface (SPDIF):** The standard format for exchanging digital audio signals between consumer audio and audio/video *components*. Connections can be *coaxial* or *optical*.

**speaker (or loudspeaker):** A component that accepts audio signals from a *receiver* or amplifier and converts them into sound waves for listening at some distance (unlike headphones).

**specification (spec):** A manufacturer's numerical rating of a *component's* performance in terms of a discrete characteristic such as *resolution*.

**standard-definition TV (SDTV):** A subset of the *digital TV* (DTV) standard covering digital signals that will yield picture quality at least as good as that of *analog NTSC* television (480i); see *high-definition TV (HDTV)* and *enhanced-definition TV (EDTV)*.

**stereo:** The use of two or more audio channels to provide spatial realism or directional effects; nowadays "stereo" usually refers only to two-channel programs, equipment, or systems. See *multichannel*.

**subwoofer:** A speaker designed to reproduce only low-bass *frequencies*.

**surround:** Channels or speakers in a *multichannel* audio system whose purpose is to create a sense of sonic envelopment or all-around directionality; see *home theater system*.

**surround sound:** A three-dimensional, wrap-around reproduced sound field instead of a frontal soundstage only; an audio system or part of a home theater system that creates such a sound field. See *5.1-channel*, *6.1-channel*, *Dolby Digital*, *Dolby Surround*, *Dolby Digital EX*, *Dolby Pro Logic*, *home theater system*, and *THX*.

**Super VHS (S-VHS):** A development of the VHS videocassette system that provides extended *luminance resolution*.

**S-video:** A method of transmitting video signals that carries the *luminance* and *chrominance* information separately; a set of video signals divided into luminance and chrominance components. Sometimes incorrectly called an S-VHS connection.

**sync:** That part of a video signal that tells a video *component* what part of the picture is being processed. Sync signals are usually carried on a *luminance* waveform except in

computer video signals and some *wideband component video*, where they are completely separate; see *red, green, and blue (RGB)*.

**3-D comb filter, 3-D Y/C separator:** High-performance circuits for extracting the *luminance* and *chrominance* signals from a *composite-video* signal. The three dimensions are left, right, and time.

**3:2 pulldown:** see *2:3 pulldown*.

**THX:** A certification for audio *components* of a *home theater system* that adhere to standards and specifications developed by Lucasfilm THX and can reproduce soundtracks with very high fidelity to what is obtained in a movie sound studio. There are two grades of THX certification, THX Ultra (for price-no-object setups) and THX Select (for more modest room sizes and budgets).

**THX Surround EX:** Lucasfilm THX is the first official licensor of technology for home decoding of *Dolby Digital EX* signals for 6.1-channel playback, and equipment using circuitry it has approved carries the THX Surround EX logo.

**tint control:** The consumer video-*monitor* control that adjusts the general coloration of an image; see *hue*.

**Toslink:** The most common type of *fiber-optic* connector for digital audio inputs and outputs; uses plastic fibers.

**tuner:** A *component*, or part of a component, that receives radio or TV signals from an antenna, allows the user to select a station, and demodulates the audio or audio/video signal from the broadcast *radio-frequency* (RF) signal.

**2:3 pulldown:** Video processing that compensates for the different frame rates used in film (24 frames per second) and video (30 fps); see *frame rate*.

**universal remote control:** A remote that can operate multiple devices, not simply a single *component*, and usually from more than one brand or manufacturer. Universal remotes are either preprogrammed with control codes for a multitude of specific products from most popular brands, or they can be "taught" the infrared codes used by the dedicated remotes you already have, thus replacing them.

**V-chip:** An *integrated circuit* built into a TV set that allows parents to automatically restrict the viewing of objectionable material. It works in conjunction with program-content codes transmitted with the TV signal; see *Extended Data Service*.

**Video CD:** A forerunner to the *DVD* system designed to produce "VHS-quality" video using a standard-size CD and MPEG-1 video encoding (see *MPEG-2*); popular in China.

**VHS (Video Home System):** The JVC-developed helical scan analog videocassette recording system that uses 1/2-inch-wide tape.

**wideband component video:** An output on a *DVD* player or other device that can generate or pass *progressive-scan* or *high-definition* video signals to a TV set or *monitor* able to display them.

**widescreen:** A piece of program material or a component that contains or operates with images of wider than "normal" aspect ratio (which is 4:3). High-definition TV's widescreen aspect ratio is 16:9. Display of wider images on a 4:3 screen requires letterboxing or pan-and-scan techniques.

**YCrCb:** Digital component-video signals as recorded by professional digital video recorders and encoded by an MPEG-2 encoder for recording on a DVD or transmission on a digital TV system; often confused with YPrPb.

**YPrPb:** Analog component-video signals as obtained at the outputs of a DVD-Video player or a digital TV set-top box.

### **Abbreviations**

**480i:** 480 scan lines, interlaced

**480p:** 480 scan lines, progressive

**720p:** 720 scan lines, progressive

**1080i:** 1,080 scan lines, interlaced

**A/D:** analog-to-digital

**A/V:** audio/video

**AC-3:** Audio Code 3, also known as Dolby Digital

**ADC:** analog-to-digital converter

**AFC:** automatic frequency control

**AGC:** automatic gain control

**ANSI:** American National Standards Institute

**APL:** average picture level

**ATSC:** Advanced Television Systems Committee

**aux:** auxiliary

**A/V:** audio/video

**AWG:** American Wire Gauge

**B - Y:** blue minus luminance

**bps:** bits per second

**C:** chrominance or color

**CATV:** cable TV or community antenna TV

**CCTV:** closed-circuit TV

**CEA:** Consumer Electronics Association

**CG:** character generator or computer graphics

**ch:** channel

**CIE:** Commission International de l'Eclairage (International Commission on Illumination)

**CRT:** cathode-ray tube

**D/A:** digital-to-analog

**DAC:** digital-to-analog converter

**dB:** decibel

**dBA:** decibel, A-weighted

**DBS:** direct broadcast satellite

**DD:** Dolby Digital

**D-ILA:** Direct-drive Image Light Amplifier

**DLP:** Digital Light Processing

**DMD:** Digital Micromirror Device

**DPL:** Dolby Pro Logic

**DSP:** digital signal processing

**DSS:** Digital Satellite System

**DTS:** Digital Theater Systems

**DTS-ES:** DTS Extended Surround

**DTV:** digital television

**DV:** digital video  
**DVD:** not officially an abbreviation; sometimes interpreted as "digital videodisc" or "digital versatile disc"  
**DVI:** Digital Visual Interface  
**EDTV:** enhanced-definition TV  
**EIAJ:** Electronic Industries Association of Japan  
**EPG:** electronic program guide  
**EQ:** equalizer, equalization  
**fps:** frames per second  
**FR:** frequency response  
**ftL:** footlambert  
**G:** giga (one billion)  
**GHz:** gigahertz (1,000,000,000 Hz)  
**GUI:** graphical user interface  
**HD:** high-definition  
**HDTV:** high-definition TV  
**Hz:** hertz, or cycles per second  
**I/O:** input/output  
**IC:** integrated circuit  
**IEC:** International Electrotechnical Commission  
**IEEE:** Institute of Electrical and Electronic Engineers  
**IEEE 1394:** FireWire or i.Link digital interface  
**IR:** infrared  
**IRD:** integrated satellite receiver/decoder  
**IRE:** Institute of Radio Engineers  
**ISO:** International Standards Organization  
**JPEG:** Joint Photographic Experts Group  
**K:** kelvin  
**k:** kilo (one thousand)  
**kbps:** kilobits per second  
**kHz:** kilohertz  
**LCD:** liquid-crystal display  
**LCOS:** liquid crystal on silicon  
**LED:** light-emitting diode  
**LFE:** low-frequency effects  
**lm:** lumen  
**LNB:** low-noise block downconverter  
**M:** mega (one million)  
**m:** meter or milli (one thousandth)  
**Mb/sec:** megabits per second  
**MHz:** megahertz  
**MPEG:** Moving Picture Experts Group  
**ms:** millisecond  
**MTS:** multichannel television sound  
**NAB:** National Association of Broadcasters  
**NR:** noise reduction

**NTSC:** National Television System Committee  
**PAL:** phase-alternation line  
**PIP:** picture-in-picture  
**PLUGE:** picture line-up generator  
**PPV:** pay-per-view  
**re:** referred to, in reference to  
**R - Y:** red minus luminance  
**RF:** radio frequency  
**RGB:** red, green, and blue  
**RGB+H/V:** red, green, and blue plus horizontal and vertical sync  
**RPTV:** rear-projection TV  
**s or sec:** second  
**SAP:** Secondary Audio Program  
**SDTV:** standard-definition (digital) TV  
**SECAM:** sequential colour avec memoire (sequential color with memory)  
**SMPTE:** Society of Motion Picture and Television Engineers  
**SPDIF:** Sony/Philips Digital Interface  
**S-VHS:** Super VHS  
**VCR:** videocassette recorder  
**VHS:** Video Home System  
**XDS:** Extended Data Service  
**Y:** luminance  
**Y/C:** luminance + chrominance  
**YCrCb:** digital luminance + color difference  
**YPrPb:** analog luminance + color difference