A

A/B roll editing

Editing from two source VCRs to a third VCR. This allows for transition effects like dissolves from one source tape to another.

A/D

Analog to Digital

A/V Inputs (Audio/Video Components)

Allows input of A/V signals, isolated from one another, to TV receivers, VCRs, camcorders, and combis through discrete channels, bypassing the tuner and other RF circuitry.

Absorption

The dissipation of sound energy into another form of energy-usually heat. When a sound wave encounters resistance, such as that provided by a wall or other obstacle, absorption occurs. Absorption is measured in sabins (after Wallace Clement Sabine). One sabin is the amount of absorption offered by one square foot of open air.

Absorption co-efficient

The portion of energy absorbed when a sound wave strikes a material. The absorption coefficient of a material is dependent on the frequency of the sound wave. An absorption co-efficient of 1.0 = total absorption, 0.0 = total reflection.

AC

Flow of electrons that changes direction alternately.

ACATS

Advisory Committee on Advanced Television Service (USA)

Acoustical tile

A porous architectural material, usually constructed from fiberglass or pressed particle board which is highly absorptive at the high frequencies (over 1,000 Hz)

Acoustics

The characteristics, such as how sound is reflected and absorbed, that acoustically differentiate one environment from another, such as a living room from a concert hall. The study of the

behavior of sound waves in a finite space. The characteristics of a room in respect to the transmission of sound.

Active Area/Effective Area

In the viewing area of the LCD glass, the dimensions of the perimeter of the conductive area.

Active Matrix

Method of activating a LCD panel using transistors mounted on the LCD panel to drive each pixel. This improves the color accuracy and significantly reduces the image lag making active matrix LCD panels acceptable for motion video.

Adapter

The shared component in a system that handles only host interface and communication connection functions; also, an interface between two sources.

ADC

See Analog-to-Digital Converter

Additive Color Process (Also Called RGB)

A color generation process used in video that combines Red, Green and Blue to make all colors. All three colors (red, green and blue) at 100%, makes white on a video screen; absence of all three makes black. See Subtractive Color (CYMK).

Adjustable Surround Delay (Audio Receiver)

Receivers that incorporate Surround Sound Modes allow adjustment of a delay time between the front and rear speakers. This delay time resembles the short echo or reverberation in a hall or auditorium. Longer delay times will simulate larger halls. Shorter delay times will simulate smaller halls.

ADR

See ASTRA Digital Radio

ADSL

See Asymmetrical Digital Subscriber Line

ADTT

See Advanced Digital Television Technologies

ADTV

See Advanced Definition TV

Advanced CD to Cassette Edit

Various audio systems which incorporate cassette players and CD players include advanced CD to cassette editing capabilities. With this feature, you can designate the recording time of your tape, and then the unit automatically selects tracks from a single disc (or a disc program) that can be recorded within the designated recording time.

Advanced Definition TV

Generic name, ADTV belongs to the IDTV family.

Advanced Television Research Consortium

Cooperative effort in the USA between Thomson, Philips, Sarnoff Research Center, Compression Lab and NBC to propose advanced TV systems for the United States. (Grand Alliance)

Advanced Television Test Center (USA)

Established to evaluate the different proposals received concerning advanced TV systems in the USA.

AEHA

Association for Electric Home Appliances (Japan)

AES

Abbreviation for Audio Engineering Society.

Audio Engineering Society, New York. Of potential interest in electronic production are the following: SC-2, Subcommittee on Digital Audio; SC-3, Subcommittee on the Preservation and Restoration of Audio Recording; and SC-4. Subcommittee on Acoustics.

AFC (AM/FM Tuner)

See Automatic Frequency Control

AFT (AM/FM Tuner)

Automatic Fine Tuning See Automatic Frequency Control

AGC (Automatic Gain Control)

Automatic gain can be applied ahead of almost any circuit that requires specific levels to operate. As an example, the color decoder needs to see a particular level of color sub-carrier at its input in order to display the correct color at the output. There is a reference burst, at the beginning of each horizontal line of known original amplitude. The AGC circuit looks at the incoming signal level and applies any gain correction necessary to make the burst amplitude correct. In the process of doing that, it also corrects the amplitude of the color information in the active picture area.

AI

Artificial Intelligence

Air Coupled Lenses Advanced Digital Television Technologies

Lens mounted without the benefit of a liquid coupler between the first lens element and the CRT. Although much less expensive and simpler to build, air coupled lenses have poorer contrast and lower resolution than liquid coupled lenses.

Aliasing

A term used to describe the unpleasant jaggy appearance of unfiltered angled lines. Aliasing is the “beating” effects caused by sampling frequencies being too low to faithfully reproduce an image. There are several types of aliasing that can affect a video image which include temporal aliasing (e.g. wagon wheel spokes apparently reversing) and raster scan aliasing (e.g. flickering effects on sharp horizontal lines). selected tracks are then edit recorded onto one side of a tape at a time (side A and side B).

ALICE

Agreeable Living with Intelligent Communication & Electronics (Japan)

Alternate Channel Button (TV)

Instantly alternate between the channel currently being viewed and the last channel viewed.

AM Stereo (Audio Receiver)

A receiver capable of picking up AM (amplitude modulation) Stereo broadcasts. Provides two channels of audio information for enhanced sound quality.

Ambience

The residual "room sound" of a listening environment. In classical music, for example, the term ambience is used interchangeably with the word reverberation, to refer to the persistence of decaying sounds in the listening room. (Not to be confused with ambient noise, which refers to background noise.) The subjective determination by an individual of how pleasant a listening space is perceived to be.

Ambient Light

All light in a viewing room produced by sources other than the screen.
Aspect ratio- The numeric relationship between a screen's height and width. This ratio is often defined by the selected projection medium. Hence, NTSC Video (U.S. television) has an aspect ratio of 3:4.

Ambient Noise

The average amount of background noise in an environment, measured in decibels (dB).

American TV Alliance

Cooperative effort between General Instruments and Massachusetts Institute of Technology (MIT) to develop American HDTV proposals.

AMLCD/LV

Active Matrix Liquid Crystal Display Light Valve.

Amorphous

Without definite form or shape; not crystallized.

Amplitude

The height of a waveform above or below the zero line. It refers to fluctuations of air pressure above and below normal atmospheric pressure. This corresponds roughly to loudness. However, the term amplitude can also be used to refer to electrical phenomena, in which case it represents the fluctuations of voltage or current.

AMPS (Amperes)

A unit of measurement for current.

Analog (Analogue)

A continuous signal that takes time to make a transition from one level to another. Standard audio and video signals are analog. This signal has an infinite number of levels between its highest and lowest value. (Not represented by bits, such as with digital.)

Analog Video

A video signal that represents an infinite number of smooth gradations between given video levels. By contrast, a digital video signal assigns a number for each level. The Macintosh video board converts computer-created (or digital) video to an analog signal for output to a monitor.

Analog vs. Digital

The difference between analog and digital sound is explained best in terms of the analog and digital soundtracks on the Dolby Digital print. The width of the analog soundtrack varies in a way that is directly analogous to the varying sound waves of the original sound. All analog formats have an equivalent varying parameter, such as the strength of the magnetic field on recording tape, or the side-to-side swings of the groove on a phonograph record. When played back, the varying width of the track is translated to a varying electrical voltage which ultimately causes the theatre's loudspeakers cones to move back and forth to recreate the original sound.

With a digital optical soundtrack, points along the sound waves of the original sound are assigned a numeric (or digital) value, which are represented as tiny dots on the track. These values can also be recorded as magnetic pulses on tape, or as microscopic pits on CDs. When a digital track is played back, the numeric values are converted to the varying electrical voltage needed to drive the speakers.

Digital sound can be of very high quality, and resistant to wear and tear. Without sophisticated techniques such as the Dolby AC-3 process used on Dolby Digital prints, however, it takes much more space to record or transmit digital sound than analog.

Analog-To-Digital Converter (ADC)

A device used to convert analog signals to digital signals.

Anechoic

An extremely dead acoustical condition in which reverberation is non-existent. Specially designed rooms called anechoic chambers lacking acoustical signature have been developed for critical audio testing.

Anechoic Chamber

A specially designed room in which all sound reflections are absorbed and reverberation does not exist. Such spaces are utilized extensively for the testing of microphones, loudspeakers and other audio equipment.

Anechoic Recording

Generally an instrumental recording lacking all acoustic signature. Often used for auralization processing.

Angle of Incidence

The angle formed by a ray incident on a surface and a perpendicular to the surface at the point of incidence.

The angle between a ray of light striking a surface and the normal (a line perpendicular to the surface at that point).

Angle of Reflection

The angle formed by a reflected ray and a perpendicular to the surface at the point of reflection.

ANSI

Acronym for American National Standards Institute, which sets standards for many technical fields.

ANSI American National Standards Institute.

Refers to a industry wide standard for measuring light output and resolution of projectors.

Anti-Aliasing

Anti-aliasing is the manipulation of the edges of an image, graphic or text, to make them appear smoother to the eye. On close inspection, anti-aliased edges appear blurred, but at normal viewing distance, the apparent smoothing is dramatic. Anti-aliasing is important when working with high quality graphics for television use. See aliasing.

Anti-Glare, Anti-Static Coating (TV)

AGAS is a silica coating applied to the surface of a TV screen by a spinning and spraying process. It operates by diffusing reflected light to blur images of light sources on the screen. To provide the anti-static properties, the coating is impregnated with small conductive particles.

Anti-Reflection Coating:

A thin layer of material that, when applied to a lens, increases its transmittance and reduces its reflectance.

Anti-Static Coatings

An anti-static coating is a conductive coating applied to a TV screen (or on a glass panel immediately in front of the screen) that conducts away any static charge and prevents dust from adhering to the surface of the television.

ARPA

Advanced Research Projects Agency (USA) See also DARPA

Array

A single collection of loudspeakers centrally hung in an auditorium.

Articulation

A quantitative measure of the intelligibility of speech. How well the listener understands what the speaker is saying.

Artifact:

A defect or distortion of the image, introduced along the sequence from origination and image capture to final display. Artifacts may arise from the overload of channel capacity by excess signal bandwidth. Artifacts may also result from (1) sampling effects in temporal, spatial, or frequency domains, (2) processing by the transfer functions, (3) compromises and inadequacies in the system employed, (4) cascading of minor defects, and (5) basically any other departure of the total system from "complete transparency." cf. alias; mixing, digital; image enhancement; judder; motion artifacts; rounding; transform, system.

ASCII

American Standard Code for Information Interchange. The standard code consisting of 7-bit coded characters (8 bits including parity check), utilized to exchange information between data processing systems, data communication systems, and associated equipment. The ASCII set contains control characters and graphic characters.

Aspect Ratio

Horizontal dimension of a picture expressed relative to the vertical dimensions. The aspect ratio of all broadcast composite video systems is 4 units wide by 3 units high.

ASTRA

Satellite platform employed in Europe.

Asymmetrical Digital Subscriber Line

A technology which can transmit video images (MPEG compressed data) over existing copper wire telephone lines. Currently being tested but not yet available.

Atmospheres

Low level background sounds, such as wind or traffic noise, which add to the reality of a scene. These sounds are sometimes recorded separately at a shooting location, creating what is called a wild track for mixing into the soundtrack later.

Attenuate

To reduce the level of an electrical or acoustical signal.

Attenuation

The decrease in magnitude of a signal.

ATV

Advanced TV (USA)

Audio Follow

A term used when audio is tied to other signals, such as video, and they are switched together. (The opposite of Breakaway)

Audio Frequency

An acoustical or electrical signal of a frequency that falls within the audible range of the human ear, usually taken as 20 Hz to 20 kHz.

Audio Out

Two jacks located on the back of an audio or video component. They are used to send audio (sound) from the component to either a TV, Stereo Receiver or Amplifier, for amplification or to record the output signal.

Audio/Video Input/Output Jacks (Audio/Video Components)

Input and output jacks that are typically on the back of audio and video components (TV, VCR, CD player, etc.). These allow for processing of the audio and video signals by another component. An example of use would be the output of the audio and video signals from a VCR to the inputs on a TV to allow for viewing of prerecorded material.

Auralization

The process where predicted octave-band echograms are converted to binaural impulse responses that can be convolved with anechoically recorded music simulating an impression of how the music would sound in the modeled space. It involves digital signal processing and Head-Related Transfer Functions (HRTFs). In addition to binaural responses, directive microphone, stereo, and B-format responses can be created. Basically, the ability to determine how a room will sound from a design before the room is actually built.

Auto Date/Time Recording (Camcorder)

A feature that allows the user to add the current date, or date and time, to recordings with the touch of a single control. The date, or date and time, will appear in the lower portion of the viewfinder when activated - and will disappear from the viewfinder, and the recording, when the control is pushed a second time. A special back-up battery, to retain date and time information when the camcorder is not in use has been installed at the factory.

Auto Daylight Savings Time Adjust (VCR)

Automatically moves time one hour ahead in March, one hour back in October - on the Saturday night/Sunday morning when Daylight Savings Time begins and ends - to ensure that you never forget to make the adjustments manually.

Auto Head Cleaner (VCR)

Gently, automatically cleans the video head of the VCR each time a tape is inserted or removed, to maintain optimum picture performance during both recording and playback operations.

Auto Iris Control with Back Light (Camcorder)

Constantly and automatically adjusts the lens opening for best videotaping results under varying light conditions. For backlight situations - when your subject is backlit or located in front of a window or other light source - a touch of the Back Light button will slightly increase the lens opening to provide the correct exposure and prevent dark subjects and washed out picture detail.

Auto Program Tuning (Audio System)

Pressing the "Auto Prog" button on audio systems with this feature will automatically store up to 30 preset stations in memory. If less than 30 FM stations of sufficient strength are found, the unit will also scan the AM band to store stations in the remaining memory locations.

Auto Programming (TV)

When activated, this feature automatically scans through all available channel positions - from regular antenna or cable - and programs only active, broadcasting channels into memory. Pushing channel up or down buttons, or the remote or at the set, will then sequentially move only through those preprogrammed channels.

Auto Reverse (Cassette Deck)

Automatically reverses tape direction at the end of each side of an audio cassette, for extended unattended listening.

Auto Search Tuning (AM/FM Tuner)

Pressing the tuning UP or DOWN keys for one to two seconds will activate the tuner's Automatic Search function. The tuner will search until a station of sufficient strength has been found. If the station found is not the desired one, simply repeat this procedure to select the next station. Weak stations are skipped during automatic search. They can be tuned manually.

Auto Tape Type Select (Cassette Deck)

When a cassette is inserted into a cassette deck possessing this feature, the deck will always automatically select the tape type: Ferro, Chrome or Metal (Type I, Type II, Type IV) as soon as the cassette holder is closed.

Auto Tracking (Camcorder)

When viewing recorded footage through the electronic viewfinder, or through the camcorder on the television screen, this feature automatically locates and locks-in on the optimum tracking position for crystal-clear viewing results.

Auto White Balance with Indoor/Outdoor Setting (Camcorder)

This feature automatically recognizes changes in lighting characteristics and makes the necessary camera adjustments to keep color reproduction at the right balance and uniform level at all times.

Auto-Lock Projector

A projector that automatically senses and synchronizes itself with the incoming signal over a wide range of sources with different horizontal and vertical scan rates. The better auto-lock projectors also change convergence patterns as required for different scan rates.

Automatic Channel Setup (VCR)

Activating this feature allows the VCR tuner to scan through the television frequency range, automatically storing every active, broadcasting channel into tuner memory. Subsequent scanning of TV channels, through the VCR tuner, will show only those active channels programmed into memory. The automatic channel preset operation can be repeated whenever desired, should new channels become available in the viewer's area or should the viewer subscribe to a cable service. Channels can be manually added or deleted.

Automatic Continuous Play (Cassette Deck)

To play both cassette decks in tandem, deck B will automatically play when deck A stops.

Automatic Convergence

The automatic alignment of the red, green and blue color images.

Automatic Frequency Control (AM/FM Tuner)

An automatic fine-tuning circuit for FM radio reception, which constantly samples and corrects the tuner frequency to prevent drifting.

Automatic Gain Control (AM/FM Tuner)

Circuit that keeps the output level of a tuner or receiver constant, despite variations in signal input.

Automatic Tuning System

System by Siemens, used in Europe to search and store (with name) automatically, transmitters in a country or region in sequence. Makes use of (Teletext and VPS) data in the VBI (Video Blanking Interval).

Autoscan (PC Monitor)

A microprocessor-based feature of monitors incorporating automatic synchronization of the horizontal and vertical frequencies with those of the installed video card. An autoscan monitor can thus operate with a wide range of video cards.

Auto-Sizing

Automatic picture sizing adjustment to compensate for different display modes, than enabling the display system to center the picture and fill the screen.

Auto-Termination

In equipment that has loop-thru, or "daisy-chain" connections, termination is done at the last device on the chain. Some such devices provide termination automatically by the fact that there is no cable going out. Thus this is the last device and termination is provided.

AWG

American Wire Gauge - A standard measurement for wire conductor diameter.

Axial mode

The room resonances associated with each pair of parallel walls.

Axis

An imaginary line that is perpendicular to the front of the microphone diaphragm. Those sounds reaching the microphone at an angle to the axis are said to be off-axis. This can also be applied to loudspeakers.

B

Baffle

A device used to inhibit the propagation of sound waves. Baffles are usually vertical hanging panels used to reduce reverberation time.

Balance (Audio Receiver/Integrated Amplifier/Pre-Amplifier)

Adjusts the relative volume levels of left and right channels for optimal stereo effect. Compensates for channel imbalance and non-symmetrical loudspeaker positioning.

Balanced Audio

A method that uses three conductors for one audio signal. They are plus (+), minus (-) and ground. The ground conductor is strictly for shielding, and does not carry any signal. Also Differential Audio.

Bandpass:

For a filter or thin-film coating, the wavelength range over which transmission is allowed and possibly maximized. Transmission above or below the bandpass range is restricted by design through absorption and/or reflection.

Bandwidth

A frequency range, or "band" of frequencies, within which a device operates. In audio and video, it is the band of frequencies that can pass through a device without significant loss or distortion. The higher the bandwidth, the sharper the picture; low bandwidth can cause a "fuzzy" picture. For example, the octave bandwidth between 125Hz and 250Hz would refer to all frequencies between 125 and 250Hz. Audio component specifications are often given with reference to a specific bandwidth (i.e. 2dB from 15 to 15,000 Hz).

Bandwidth Limiting:

A reduction in the effective bandwidth of a signal, usually to facilitate recording, transmission, broadcast, display, etc. The reduction is usually accomplished through the action of an algorithm, which may involve simple lowpass filtering, more complex processing such as interleaving or quadrature modulation, or complete resampling. The term bandwidth limiting is normally applied in analog systems, although it also has a comparable meaning in digital systems. cf. bit-rate reduction; compression, lossless; compression, lossy; data compression; data resampling; image compression; IRE units; transfer function,

Barrier effect

The perceived increase in low frequency energy as you get close to a surface.

Bass

The lower range of audio frequencies, up to approximately 500 Hz.

Bass Reflex (Loudspeaker)

A ported loudspeaker configuration using an acoustically-tuned vent, through which low-frequency sound from inside the enclosure passes to strengthen and extend bass response.

Bass Trap

A low frequency absorber. Because of their large wavelength (up to 50 ft.), low frequencies are particularly difficult to absorb. Therefore, special traps must be designed to absorb these waves, if unwanted leakage and room resonances are to be eliminated.

BB
Baseband

BBT
Broadband Technology

Beat
A periodic variation in amplitude that results from the superposition or addition of two tones with nearly the same frequency.

Bellcore
Research consortium of regional Bell telephone companies (USA).

Bend Angle –
The angle through which a projected light ray must be diverted from its original path to reach a viewer's eyes.

Bending:
The ratio of the curvatures of a lens's two refracting surfaces.

Bi-Concave:
Having two outer surfaces that curve inward.

Bi-Convex:
Having two outer surfaces that curve outward.

Binary Code
Ones and zeros used to represent audio information in a digital stream of information.

Binaural
Sound reproduction using two microphones usually in a "dummy head" (to emulate the shape and the response of the human hearing system) feeding a pair of headphones, so that the listener hears the sound he or she would have heard at the recording location.

Bi-radial horn
A horn in which both the vertical and horizontal surfaces flare outward, though usually at different rates.

Birefringence:
The separation of a beam of light into two beams (ordinary and extraordinary) as it passes through a doubly refracting material or object.

BIT (Binary Digit)
Contraction of "binary digit," the smallest unit of information in a binary system; a one or zero condition. 1 - "A contraction of the term binary digit a unit of information represented by either a zero or a one" [IEEE 100]. 2. One digit in a binary (base 2) mathematical system. 3. "A unit of information content equal to the information content of a message the a priori probability of which is one-half" [IEEE 100]. cf. byte.

Black & White

Monochrome or luminance information. Monochrome means one color. In the color television system the Black & White portion of the picture has to be one "color"; gray, D6500, 6500K as defined by x and y values in the 1939 CIE color coordinate system.

Black, Absolute:

1. Optical black is no light. An absolute black can only be produced in a scene via a light-trap, "a black hole."

2. (video) A capped lens on the camera is the equivalent of an absolute scene black and should produce reference black level video signal from a properly adjusted studio camera. cf. black level; black level, reference; setup.

Blooming

Most noticeable at the edges of images on a CRT, "blooming" is when the light (color) is so intense that it seems to exceed the boundary of the object. Thin lines and sharp edges could look thick and fuzzy. This may be caused by the brightness being set to high, or by a high voltage problem.

Blue Background/Audio Mute (VCR)

Automatically changes the TV screen to a solid blue background and mutes all sound when a non-recorded section of tape or a non-broadcasting TV channel is encountered.

BNC & BNC Connector

It is a cylindrical Bayonet Connector which operates with a twist-locking motion. Two curved grooves in the collar of the male connector are aligned with two projections on the outside of the female collar. This allows the connector to be locked in place without the need of tools. A connector typically used with professional video equipment for connecting cables that carry the video signal. Compare RCA connector and XLR connector.

Boomy

A slang expression for excessive bass response in a recording, playback, or sound-reinforcing system.
The curving of scan lines in the center of the image.

Breakaway

The ability to separate signals for the purpose of switching them independently. For example: an audio and video signal from the same source may be "broken away" and switched to different destinations. This is the opposite of the term "follow".

Brightness (peak)

Measurement of the amount of light a projector can produce. This is an often quoted but misleading specification since it measures the light in the center of the image with only a small part (usually 10%) of the total image area being illuminated. The test signal for generating this is a black field with a small white square in the middle. In addition no consideration is given to the effects of high brightness settings on the resolution of the image. Most manufacturers are shifting to the ANSI measurement standard which is a more accurate representation of projector performance.

Brightness Ratio

The difference between the brightest and darkest object in a picture. Too much of a difference can cause unacceptable contrast.

Brightness Uniformity (PC Monitor)

The brilliance of the darkest area of a uniformly white screen as a percentage of the brilliance of the brightest area. Theoretically this figure should be 100% but in practice it rarely exceeds 75% due to limitations in the picture tube. The importance of good brightness uniformity has increased recently due to the growth of GUIs (e.g. Windows, OS/2, Macintosh) which operate with light backgrounds. The latest Computer-Controlled Monitors, which compensate digitally for individual tube variations, can in principle achieve a perceptual brightness uniformity close to 100%.

BSS

Broadcast Satellite Service

Buffer

Generally referred to as a unity gain amplifier used to isolate the signal source from the load. This is for both digital and analog signals.

C

Cable Equalization

The method of altering the frequency response of a video amplifier to compensate for high frequency losses in cables that it feeds. (See Peaking.)

Cable TV Network

Broadcast system which relays program information via in ground cable.

Cable Labs

Cable Laboratories is funded by US cable service operators to carry out evaluation of signal compression systems and other technology related to cable TV.

CAD

Computer Aided Design. The use of the computer system for designing.

CATV

See Cable TV Network

CAV (Component Analog Video)

Component video signals in which an analog voltage or current (rather than a set of numbers) represents the value of the pixel, the same as "analog components."

CCD:

Charge Coupled Device. A self-scanning semiconductor imaging device which uses metal-oxide-semiconductor (MOS), surface storage and information transfer technologies.

CD-DA

See Compact Disc-Digital Audio

CD-I

Compact Disc-Interactive. A format that provides audio, digital data, still graphics and limited motion video.

CD-ROM

Compact Disc-Read Only Memory. A 4.75-inch laser-encoded optical memory storage medium with the same constant linear velocity (CLV) spiral format as compact audio discs and some videodiscs.

CD-ROM XA

Compact Disc-Read Only Memory Extended Architecture. An extension of the CD-ROM standard billed as a hybrid of CD-ROM and CD-I, and promoted by Sony and Microsoft. The extension adds ADPCM audio to permit the interleaving of sound and video data to animation, with sound synchronization.

Channel Reminder Display (TV)

Unobtrusively displays the number of the channel currently being viewed in the lower left-hand corner of the screen. The display may be set to remain on constantly or appear every 30 minutes.

Channel Search (VCR)

When the VCR is set in the tuner mode, and the Channel Search button on the remote transmitter is pressed, the tuner will automatically begin scanning through all channels programmed into memory, showing the programming on each channel tuned for approximately 1 1/2-seconds before moving to the next channel. Should a desired channel be tuned during Channel Search, a second touch of the button stops the search operation at that point. If the scan search is not stopped, the tuner will go through all available channels, then return to the channel originally tuned and stop.

Chrominance Signal

Part of a color television signal containing the color information. Abbreviated by "C".

Chrominance:

The color part of a signal, relating to the hue and saturation but not to the luminance (brightness) of the signal. Any colored signal has both chrominance and luminance.

CIE - Commission Internationale de l’Eclairage (The International Commission on Illumination)

The organization responsible for the chroma diagram of 1939. A three dimensional diagram that defines light and color. Other systems have been developed by CIE more recently.

Clipping

The process of cutting off the peaks of either the white or the black portions of a video signal. Distortion in a mixer or amplifier due to severe overloading of signal level.

Coaxial Cable

two-conductor wire in which one conductor completely wraps the other with the two separated by insulation. Constant impedance transmission cable.

Color Bar

A test pattern containing six basic colors: yellow, cyan, green, magenta, red, and blue - used to check the chrominance functions of color TV systems.

Color Correction:

A process in which the coloring in a video image is altered by electronic means.
"The adjustment of a color reproduction process to improve the perceived-color conformity of the reproduction to the original" [IEEE 100].

Color Phase (Hue)

The correct timing relationship within a color display. Color is considered to be in phase when the hue is reproduced correctly.

Color Resolution

The number of colors available at once in an image, measured in terms of bits per pixel.

Color Temperature

A way of describing the color of a radiating source in terms of the temperature (in degrees Kelvin) of a black body radiating with the same dominant frequency as the source. Certain high-end monitors offer the possibility of setting the color temperature to any desired value. By setting the color temperature, one can often achieve more realistic screen colors.

Color, Additive:

1. "Over a wide range of conditions of observation, many colors can be matched completely by additive mixtures in suitable amounts of three fixed primary colors... The choice of three primary colors, though very wide, is not entirely arbitrary. Any set which is such that none of the primaries can be matched by a mixture of the other two can be used" [Wyszecki and Stiles].

2. It follows that the primary color vectors so defined are linearly independent. Therefore, transformations of a metameric match from one color space to another can be predicted via a matrix calculation. The limitations of color gamut apply to each space.

3. The additive color generalization forms the basis of most image capture, and of most self-luminous displays (i.e., CRTs, etc.). cf. color space, reference; color, subtractive; display; image capture; CIELab color space; CIELuv color space; metameric match; R,G,B color space; spectrophotometric match.

Color:

The aspect of a light source that can be described in terms of hue, brightness and saturation; the specific property of objects seen as red, yellow or blue as opposed to black, white or gray.

Coloration

A term used to indicate audible alterations to the sound arising from the response pattern of a microphone or loudspeaker. It can also describe sound alterations due to the environment. Coloration can be a result of standing waves or room resonances.

Comb Filter

A filter for high resolution and picture sharpness which eliminates "dot crawl" and "hanging dots" caused by cross-color and cross-luminance distortion. Comb filters provide exceptional isolation of chrominance and luminance information and increased picture resolution for sharper, clearer, more detail-perfect color picture reproduction. Capable of delivering 700 lines of horizontal resolution, at the S-Video input, it greatly exceeds the maximum clarity of the 330 lines of horizontal resolution delivered by broadcast television, and easily supports the demands of videodisc, CD-i and other advanced high resolution video media.

Compact Disc-Digital Audio (Audio CDs)

One disc contains up to 72 minutes of digital audio.

Compact Disc-Erasable

A CD-R(ecordable) disc that can be erased and rewritten.
A CD format which uses audio, text, full motion video, and graphics to create a unique interactive experience.

Component Video

Our color television system starts with three channels of information; Red, Green, & Blue (RGB). In the process of translating these channels to a single composite video signal they are often first converted to Y, R-Y, and B-Y. Both 3-channel systems, RGB and Y, R - Y, B - Y are component video signals. They are the components that eventually make up the composite video signal. Much higher program production quality is possible if the elements are assembled in the component domain.

Component video is a newer format of video signal that takes the advancement from composite (1-signal) to S-Video (2-signals) one step further. It has separated luma (brightness) and chroma (color), but the chroma is also separated into two signals, red and blue.

The result is a triple-headed cable of three RCA connectors and an image cleaner than composite with less color bleeding that S-Video. Although common on newer DVD players and high-end HDTV's, component video is very rare on standard TV sets and VCR's.

Composite Video

A composite video signal is one in which the luminance, chrominance and sync information have been combined into a single signal using one of the coding standards: NTSC, PAL, SECAM, etc. This is the form the signal must take before it can be broadcast or recorded by standard means. Until recently, most monitors and projectors have accepted only composite video signals, although many now available accept RGB. See NTSC.

Compression

The electronic reduction of dynamic range. Compression is accomplished by means of a compressor or limiter.

Constant Directivity

A loudspeaker in which the produced sound does not become more directional as the frequency rises.

Contrast Ratio

This is the ratio of the highlight output level divided by the low light output level. In theory, the contrast ratio of the television system should be at least 100:1, if not 300:1. In reality there are several limitations. In the CRT itself, light from adjacent elements contaminate the area of each element. Room ambient light will contaminate the light emitted from the CRT. Well controlled viewing conditions should yield a practical contrast ratio of 30:1 to 50:1. The numeric relationship between the brightest and the darkest portions of a display expressed in foot-lamberts as a ratio of Max:Min. luminance.

Convergence

(1) The beam-position accuracy of the red, green, and blue beams of a color monitor or projector. Color systems require exact accuracy of beams, both for position and speed, to properly produce the desired colors from their phosphors. (2) The adjustment of the red, green, and blue electron beams in a monitor or video projector to align the red, green and blue images. Cross color A defect characteristic of NTSC composite video that manifests itself as spurious rainbow patterns on highly textured objects like the one found on a striped shirt or tweed jacket. Cross-color defect is attributed to the make-up of the signal which mixes the high luminance and chrominance information in the same composite base band spectrum. Johnny Carson used to wear ties with designs specifically designed to create this effect.
When the critical angle is exceeded, all the light reflects back to the denser of the two media.

Critical Distance

The distance from a sound source at which the direct energy (energy radiated directly from the source) is equal to the reverberant energy (radiated from walls, floor and ceiling).

Critical Listening Space

An optimized acoustic environment.

Crossover Frequency

In a loudspeaker with multiple drivers, the crossover frequency is the -3dB point of the network dividing the signal energy.

CRT (Cathode Ray Tube)

A vacuum tube that produces light when energized by the electron beam generated inside the tube. A CRT has a heater element, cathode, and grids in the neck of the tube, making up the "gun". An electron beam is produced by the gun and is accelerated toward the front display, or screen surface of the tube. The display surface contains phosphors that light up when hit by the electron beam. The CRT is more commonly known as picture tube.

Cut-off

The frequency at which a given effect ceases to operate. For example, a high-pass filter might have a low end cut-off frequency of 1000 Hz, so that all signals below 1000 Hz would be attenuated. Cut- offs are usually graduated or "rolled-off" in steps of several dB per octave (3,6 or 12 for example) Beginning at the cut-off frequency.

D

D CONNECTOR
A connector with rounded corners and angles ends, taking on the shape of the letter "D". Commonly used in computers and video.

D/A
Digital to Analog

D1
Digital format for highest broadcast quality component video.

D2
Digital format for extremely high-quality composite video.

DAC
Digital to Analog Converter

DAT
Digital Audio Tape - A method of recording digital audio information on tape at a high density and high quality. The method uses a rotating head, similar to that used in video tape recording.

dB (Decibel)
The measuring unit of sound pressure and hence loudness. The decibel is actually a numerical ratio between the sound pressure of a given sound and the sound pressure of a reference sound (usually .0002 microbar). Common decibel levels encountered vary from the rustling of grass (15 dB) to conversation (50 dB), to live rock groups (110 dB) to jet plane engines at close range (130 dB). A doubling of volume is a 10 dB increase. To double volume in a stereo system requires a ten-fold increase in power output (watts).

DBS
See Direct Broadcast Satellite

DC
Direct Current - The flow of electrons in one direction.

DCC
See Digital Compact Cassette

DCC
See Dynamic Contour Control

DCF
See Dynamic Contour Function

Dead
An acoustical condition in which reverberation is absent. A room whose surfaces are covered with heavily absorptive materials.

Decay time

The length of time taken for a signal to decay to a specific portion of its initial value. Decay time is often frequency dependent. The decay time of a room at a specific frequency is the time necessary for a sound of that frequency to decay 60 dB.

Decibel (dB)

The measuring unit of sound pressure and hence loudness. The decibel is actually a numerical ratio between the sound pressure of a given sound and the sound pressure of a reference sound (usually .0002 microbar). Common decibel levels encountered vary from the rustling of grass (15 dB) to conversation (50 dB), to live rock groups (110 dB) to jet plane engines at close range (130 dB). A doubling of volume is a 10 dB increase. To double volume in a stereo system requires a ten-fold increase in power output (watts).

Decoder

A device used to separate the RGBS (Red, Green, Blue and Sync) signals from a composite video signal (90 IQ).

Definition:

"Distinctness or clarity of detail or outline in an [image] reproduction" [IEEE 100]. cf. resolution, image; resolution, visual; sharpness.

Degaussing

The procedure of demagnetizing the shadow mask of a computer monitor or TV screen and associated metal parts of a picture tube to minimize picture distortion. This is usually accomplished by means of a special degaussing coil through which a decaying alternating current is applied to demagnetize the tube.

Demodulation

The separation of an RF signal into its audio and video components.

Diffuse Sound Field

The area in a room with multiple reflections equally probable in all directions.

Digital Audio Tape

A digital recording audio format which combines the 16-bit audio quality of compact discs with the recording capability of analog cassettes.
provided on the remote transmitter to give the user manual control should additional adjustment be necessary.

Digital Compact Cassette

A tape format which both plays and records with compact disc fidelity. DCC decks can also play conventional analog cassettes.

Digital Control (TV)

Microprocessor-based control of picture parameters and video modes for complete control of picture settings and modes and automatic recall of all settings. This advanced feature allows the user to switch to any required mode without having to spend time readjusting the picture.

Digital Satellite System (USA)

Programs by DirecTV and USSB (Hubbard Communications).

Digital Signal Processing (DSP)

Found on many newer camcorders, DSP is a method used to improve picture quality. DSP circuits for audio products will change the sound of music.

Digital Sound Processor

A microprocessor that can manipulate, correct, and/or modify a musical signal in the digital domain.

Digital Video

Provides the user the benefit of watching feature-length motion pictures on CD-i, and the ability to play high impact digital video CD-i software.

Direct Broadcast Satellite

High power satellite broadcast device intended to allow for reception of its signals with reduced size "dish" antennas.

Direct Sound

Sound waves arriving at the listening location directly from the source. Differing from reflected sound, which arrives at the listening location after bouncing off the surrounding surfaces.

DirecTV(USA)

One of the program providers on USA's Digital Satellite System. Subsidiary of Hughes Aircraft Co.

Discrete Components

The use of separate transistors, resistors, etc. instead of integrated circuits in audio components. This is a more costly production method, but these individual components usually have tighter tolerance, better heat dissipation characteristics, and usually do a better job of reproducing music.

Dispersion:

The term used to describe a speaker's ability to spread sound throughout a large area.
The separation of light into its component colors, as a prism disperses white light into a color band, or a rainbow effect.

Distortion (Harmonic)

The production of harmonics which do not exist in the original waveform.

Distortion:

Variations in magnification from the center to the edge of an image, making straight lines seem to curve. Barrel, or negative, distortion causes a square grid to appear barrel-shaped; pincushion, or positive, distortion increases in proportion to the distance from the center of the image.

Distribution Amplifier (DA)

A device that allows connection of one input source to multiple output sources such as monitors or projectors.

DLP (Digital Light Processing)

See DMD.

DMD (Digital Micromirror Device)

In 1977, it was originally called "Deformable Mirror Device". Texas Instruments has developed DMD microchips used in DLP (Digital Light ProcessingTM) projector subsystems that hope to replace the 100-year old CRT technology. DMD chips use an array of mirrors and memory cells. A digital image is stored in the memory, and then projected when light is reflected onto the mirrors.

Dolby 3-Channel

Dolby 3-Channel operates like Dolby Pro-Logic except that in Dolby 3-Channel rear speakers are not used. Dolby 3-Channel is usually included on Dolby Pro-Logic receivers for users who wish to wait to buy rear speakers or for those whose home theater environment is too small to accommodate rear speakers.

Dolby AC-2

A 2-Channel Low bit rate digital coding system proposed by Dolby Labs. Primarily intended for professional applications.

Dolby AC-3 –

The multichannel coding technology used on Dolby Digital films soundtracks and the new Dolby Digital (Surround AC-3) laser discs, by the upcoming US High Definition TV system, by the new DVD, and in numerous cable and satellite applications.); not backwards compatible with MPEG1.

Dolby B & C Noise Reduction (Cassette Deck)

Two systems of noise/hiss reduction invented by Ray Dolby. They work by boosting high frequencies during recording (also called encoding) and attenuating them during playback (also called decoding). Dolby B Noise Reduction boosts the level of the high frequency range during recording and tapers the high frequencies during playback, reducing tape hiss by 8 to 10 dB. Dolby C Noise Reduction uses the same principle as Dolby B, with the addition of a second stage in which the frequencies affected are lower by about one octave. This results in a 15 to 18 dB reduction in tape hiss over an extended frequency range.

Dolby Digital –

The multichannel digital format used in cinemas and in consumer delivery systems such as home theatre (including laser discs), HDTV and DVD. The format uses Dolby's AC-3 audio compression technology to derive the required digital audio bit streams.

Dolby HX Pro Headroom Extension System (Cassette Deck)

This system improves the recording performance of cassette decks. It prevents large high-frequency signals from overloading the tape by introducing automatic bias compensation. HX Pro is not a noise reduction system (see Dolby B & C Noise Reduction) because it functions only during recording and no decoding is required. Therefore, a tape recorded with the HX Pro system can be played back on any other cassette deck while retaining the benefits of HX Pro.

Dolby Noise Reduction –

Complementary (record-play) signal processing systems developed by Dolby Laboratories to reduce the noise inherent in recording media without affecting the sound being recorded. Dolby A-type noise reduction is the original professional Dolby system and is used on Dolby movie soundtracks, while the Dolby B-type, C-type, and new S-type systems are for consumer formats such as the audio cassette.

Dolby Pro Logic –

The more advanced form of Dolby Surround that not only recovers the surround information from encoded program material, but also adds a center channel to keep dialogue and center effects firmly positioned on the television screen. Pro Logic permits a wider listening/viewing area, provides better channel separation, and gives more accurate sonic perspectives.

Dolby SR (spectral recording) –

The most powerful analog Dolby system, used for the analog soundtracks on all Dolby Digital prints and on many analog-only releases as well. It not only provides greater noise reduction than the original Dolby A-type system, but also permits recording a wider frequency range, particularly at high signal levels.

Dolby SR•D –

The term the film industry uses to identify 35 mm release prints containing both an analog Dolby Stereo SR ("SR") and Dolby Digital ("D") optical soundtracks. The term is sometimes misused to identify just the Dolby Digital format or presentations.

Dolby Stereo –

Dolby Laboratories' original motion picture system, wherein Dolby A-type noise reduction was used in the recording and playback of movie soundtracks. Dolby Stereo represents 4 channels of sound (see the definition of Stereo below) with Dolby recording equipment used to combine the four channels used in the studio into 2 channels for placement on the film, and then Dolby playback equipment used to convert the 2 tracks on the film back into 4 channels of sound in the cinema. Today the term has come to represent and umbrella term for Dolby film sound technologies.

Dolby Surround Sound

The predecessor to Dolby Pro-Logic, Dolby Surround Sound is a more basic version using only two front speakers with the two rear speakers. This arrangement doesn't localize the dialogue as well as Dolby Pro-Logic, but still retains the ambience associated with sound in a theater.

Doubler

See Line Doubler.

Driver (Loudspeaker)

A sound reproducing device. The woofer, midrange, and tweeter are the drivers in a speaker enclosure.
Diode Transistor Logic.

DSP

Digital Signal Processing/Processor

DSS

See Digital Satellite System

DTH

Direct To Home (Satellite Broadcast)

Dubbing Theatre –

A special theatre equipped for mixing film soundtracks. The sound systems in dubbing theatres where Dolby soundtracks are mixed and in Dolby-equipped cinemas are calibrated to the same standards. This helps makes it possible for audiences to hear the sound the director heard—and intended—when the soundtrack was mixed.

DVD

See Digital Video Disc

DVD

(Digital Video Disc) An optical disc system about the size of a CD ROM, but capable of storing an entire movie. The technology uses MPEG-2 compression. Typical capacity for these discs is 4.5 GB, or about 133 minutes of digital video.

DVI

DVI (Digital Video Interactive) is the third major compression standard. See JPEG and MPEG. DVI, developed several years ago by Intel and IBM, is actually two standards; Real-Time Video (RTV) and Production-Level Video (PLV).

Dynamic Bass Boost

DBB offers specific help in the very critical bass area. Boosting the bass as much as eight decibels (nearly three times more than normal) allows the sound to be full and rich at all volume levels.

Dynamic Focus (TV)

The electron beam in conventional big-screen tubes inherently produces soft focus at the corners of the picture. A Dynamic Focus system constantly adjusts the video electron beam with special in-line voltage "lenses" so it is always in perfect alignment with all parts of the tube faceplate. Corner and side focus are always optimized, resulting in superb corner clarity.

Dynamic Headroom

The ability of an amplifier to produce more than its rated power for very short periods of time. An amplifier rated at 100 watts per channel with three dB of dynamic headroom can briefly produce 200 watts per channel.

Dynamic Range

All audio systems are limited by inherent noise at low levels and by overload distortion at high levels. The usable region between these two extremes is the dynamic range of the system. Expressed in dB.

Early Reflection

Reflected energy that occurs in close proximity to the source, but is slightly out of sync (time/phase) with the source information.

Echo

A distinctly discernible reflection or repetition of the source signal. The term is often used incorrectly to refer to reverberation, which consists of multiple decaying reflections so closely spaced that they are indistinguishable from one another.
decision. cf. aperture correction; contour enhancement; image enhancement; resolution, visual; sharpness.
settings - Camera and VCR. Camera is used when you tape, VCR when you playback. Edit Search lets you use VCR functions while in the Camera mode.
work. A universal text file that describes how an edit should take place. A service bureau can use your EDL to output high quality video.

EDTV

See Enhanced Definition TV

Effective Focal Length:

See Equivalent Focal Length.

Effects –

Sound effects, i.e., the non-musical elements on a soundtrack other than dialogue.

Electro-Magnetic Interference (EMI)

A type of interference caused by mains current flowing through wires in close proximity to audio cables. The magnetic field around the power cables makes its way into the audio cables, causing interference and hum, buzz, etc. Also caused by fluorescent lights, neon lights, switching loads (HVAC equipment), computers, RF transmitters, car ignitions, etc.

Enhanced Definition TV

4:3 Aspect Ratio; Extended Definition TV. 16:9 Aspect Ratio. Generic name of TV sets which are essentially based on IDTV but also use additional signals added at the transmitter. Systems are to be backwards compatible with the normal standard system (NTSC, PAL).

Equal Loudness Contours

A set of curves of equivalent loudness, which model the ear's frequency response throughout the audible spectrum. The curves, obtained from actual testing, show how much more sound power is required at one frequency than another to obtain a sound of equal loudness. The results show that the human ear is less sensitive to sound at the extreme high and low frequencies.

Equalization

The adjustment of timbre, or tone quality, achieved by changing the amplitude of a signal at different frequencies. (Abbreviated: EQ.) Tone controls are simple forms of equalization. More complex equalizers incorporate adjustable frequency centers and bandwidths.

Equalization (third octave band)

Equalizers divided into the third octave bands centered at 16, 31.5, 63, 125, 250, 500, 1,000, 2,000, 4,000, 8,000, and 16,000 Hz.

EZTV
Software for interactive television proposed by Apple on June 25, 1993.

F

FCC

Federal Communications Commission - A unit of the U.S. Government that monitors and regulates communications.

FDM

Frequency Division Multiplex

Feedback, Acoustic

Unwanted interaction between the output and input of an acoustical system, e.g., between the loudspeaker and the microphone of a system.

Fiber

Abbreviated term referring to fiber optic cable.

Fiber Optic

A transmission medium designed to transmit digital signals in the form of pulses of light. Fiber optic cable is noted for its properties of isolation from radio frequency and electromagnetic interference, as well as resistance to electrostatic contamination.

Fiber To The Home

Describes delivery and installation of fiber optic cable in the home. FTTC=Fiber To The Curb (Trunk Lines in Fiber); FITL=Fiber In The Local Loop.

Field

A portion of a frame in interlaced video; in NTSC broadcasts, a field is every other scan line. One of two portions of the screen in an interlaced display. Two fields make a frame.

Fixed Audio Output

A nonvariable audio output. When connected to the input of a VCR or other recording device, it provides a stable volume level to that device, regardless of volume variations at the source.

Fletcher-Munson Curves

The Equal loudness contours plotted by the researchers Fletcher and Munson. Human ears are most sensitive to sound between 1,000 Hz and 4,000 Hz. Above and below those approximate frequencies, a tone must be several dB greater in order to be perceived as equally loud as a tone in the 1,000 Hz to 4,000 Hz range.

Flutter

A repetitive echo set up by parallel reflecting surfaces.

Flying Erase Head (Camcorder)

Allows the user to edit, while shooting, and achieve perfectly clean "splices" between the edited segments. The flying erase head follows a path in its erasing process which matches that of the recording heads, completely eliminating the unerased blanks and rainbow streaking effect left by fixed erase heads.

Flying Erase Head with Audio/Video Dubbing (Camcorder)

Allows the user to edit, while shooting, and achieve perfectly clean splices between the edited segments. The flying erase head follows a path in its erasing process which perfectly matches that of the recording heads, completely eliminating the unerased blanks and rainbow streaking effect left by fixed erase heads. This enables the user to more professionally achieve the added benefits of Audio and Video dubbing - whereby new audio or video can be added to existing recordings without erasing or disturbing existing video or audio information.

A standard erase head is mounted along the tape path, not on the video head drum. A flying erase head is built into the drum and the results are clean edits without "rainbowing". It's a must for editing.

FM (Frequency Modulation)

A method of combining an information signal with a carrier signal so that it may be transmitted. FM uses the information signal to add to, and subtract from, a carrier frequency, thus "modulating" the carrier frequency. Example: audio frequency is "modulated" onto a radio frequency (RF) and transmitted. An FM radio receives the transmitted signal and removes (demodulates) the RF, producing a copy of the original audio.

Focal Length

The distance from the optical center of the lens to the surface of the image sensor, with the lens placed on infinity. In practice, a lens with a short focal length is a wide angle; a long focal length is a telephoto; a variable focal length is a zoom.

Foley –

The art of recreating incidental sound effects, such as footsteps or rustling clothes, in sync with the picture. Named after one of its first practitioners.

Foot Lambert

The luminance (brightness) resulting from a surface emitting a luminance flux of one lumen per square foot. The luminance of a perfectly reflecting surface receiving an illumination of one footcandle.

Foot-Candle-

The fundamental unit of illumination representing the light intensity over a 1 square foot surface which is 1 foot away from a standard candle.

Four-Head Double Azimuth Design (VCR)

The Double Azimuth 4-head system combines with direct drive cylinder and capstan motors, with precise digital servo control, to produce excellent special effects reproduction (Still, Slow, and, with the appropriate remote control, Frame Advance, Variable Slow Motion and X2 Play) in both the SP and SLP speeds. Effects are noiseless and virtually jitter-free.

Frequency

In musical terminology, frequency generally refers to the pitch of a sound. The frequency of a sound is measured in cycles per second (hertz). One cycle is one complete audio waveform. Bass frequencies have a lower number of waveforms (or cycles) per second, and treble frequencies have a very high number of waveforms (or cycles) per second. Frequency determines pitch; the faster the frequency, the higher the pitch. The human ear can hear frequencies in the range of 20 to 20,000 Hz.

Frequency Response

The frequency range in which an electronic component can accurately reproduce its input. Humans can hear from 20 Hz to 20,000 Hz (20 KHz). An ideal component would have a Frequency Response, totally flat or without any deviation, from 20 Hz to 20 KHz. Frequency Response specifications are measured in decibels (dB), based on how closely a component's response resembles that of the ideal.

Front Panel Audio/Video Inputs

Provide added convenience to the user when recording tapes directly from a camcorder to the VCR. In addition, accessory video equipment such as video games or a CD-i player can be connected for direct play-through to the TV set.

Front Projection / Front Throw Projector

Conventional projection technique of displaying an image on a white surface. The viewer and the projector are on the same side of the screen. The alternative is to rear project an image on a translucent screen where the viewer is on the opposite side of the screen from the projector.

FSS

Fixed Satellite Service

FTTC

Fiber To The Curb

FTTH

See Fiber To The Home

Full Duplex RS-232 Network Control

RS-232 is a standard for serial digital communication. Typically used between computers and printers or modems it offers full communication between multiple devices. Any device on the network may either transmit or receive data.

Fundamental

The basic pitch of a musical note.

FX

Special effects. Sometimes abbreviated SFX.

G

Gain

A general term used to denote an increase in signal power or voltage produced by an amplifier in transmitting a signal from one point to another. The amount of gain is usually expressed in decibels above a reference level. Opposite of Attenuation. A measurement usually made perpendicular to screen center of the luminance transmitted by the screen, divided by the luminance radiating from the projector.

Gain, Unity

A condition in which the output level is equal to the input level.

Geometric Distortion

A deviation of the reproduced picture from its intended shape.

Ghost

A shadowy or weak image in the received picture, offset either to the right or to the left of the primary image. It is the result of transmission conditions where secondary signals are created and received earlier or later than the primary signal caused by a reflected RF signal.

Ghosting

A phenomenon occurring when voltage from an energized element leaks to an adjacent OFF element and turns the adjacent element partially ON.

Gobo

A device used to inhibit the propagation of sound waves. Gobos are usually employed to prevent microphone leakage between two instruments being recorded simultaneously. Typically a set of portable dividers covered with acoustical treatments.

Grand Alliance

The three consortia competing for the American Digital TV standard have reached in-principle agreement on collaboration to come to a single system to be presented to the FCC. (Zenith/AT&T, Philips/Thomson/NBC/David Sarnoff Research/Compression.

Graphic Equalizer

Tone control device that uses separate adjustments to cut or boost different frequencies within the audio band. A graphic equalizer provides greater control over tone than single-knob tone controls.

Gray Scale:

1. "(video) An optical pattern in discrete steps between light and dark. Note: A gray scale with ten steps is usually included in resolution test charts" [IEEE 100].

Grazing Effect

The way in which sound is absorbed by the audience; stepping or raking the seating reduces the absorption, and improves sight lines. Any implied relationship between people and ruminants is purely coincidental.

Ground Loop

A state where too many electrical grounds are connected at different points. See Grounding. The earth potential path becomes unstable with varying potentials between different pieces of equipment. As the potential varies new circuit path loops are created. This usually causes an audible frequency (60Hz in the U.S.; plus harmonics) hum from the electronics to the speakers

A potential system grounding problem that may produce symptoms that appear as sync noise and causes a horizontal bar to "roll" vertically on the video image. A ground loop occurs when some devices in a system are not connected to the same electrical ground. This can create a voltage potential between "ground" on the different pieces of equipment. See GLI.

Grounding

A signal path to earth where a physical connection with earth provides a potential attracting unwanted electrical transients. Generally created by 10' copper rods driven into the earth. The rods are then connected to the electrical service ground buss or a separate connection to equipment chassis. An electrical ground and an earth ground may or may not describe the same connection. If multiple paths are available to the "ground" (earth connection) a ground loop can occur. See ground loop. Metallic shielding of electrical signals is nonexistent without proper grounding. If there is one ubiquitous problem in audio, it is the inattention to proper grounding procedures.

H

Haas effect

Also called the precedence effect. Delayed sounds are integrated if they fall on the ear within 20 to 40 msec of the direct sound. The level of the delayed components contributes to the apparent level of the sound.

Hall Surround Mode (Receiver)

One of several different modes available in audio receivers shape the sound to more closely resemble a live performance. With the Hall setting, the listener gets the spacious effect of a concert hall when playing stereo (but not mono) source material.

Harmonic distortion

The production of harmonics which do not exist in the original waveform.

Harmonics (In Music, Overtones)

Multiples of an original frequency that add to, and modify, the original frequency. A pure sine wave is free of harmonics. In music, it is what makes one instrument sound different from another playing the same note. When harmonics occur in audio or video, it adds distortion to the original signal, causing undesirable results.

HD Connector

A high-density "D" connector having 15 pins arranged in three rows. A normal 15-pin D connector has its pins arranged in two rows.

HD Digital

Collective term for all digital HDTV systems.

HDTV (High Definition Television)

High definition TV is a television standard with higher resolution (in the order of 1,125 lines of resolution) than the present NTSC standard of 525 lines.

The term describes several advanced standards proposals to allow high-resolution TV to be received in the home.

Headroom

The capacity of a device above its normal operating level in which it can permit peaks to pass undistorted. Space left between the top of a person's head and the upper frame.

Helmholtz resonator

A reactive, tuned, sound absorber. A bottle is such a resonator. It can employ a perforated cover or slats over a cavity.

Hertz

The unit of frequency named after the physicist Heinrich Hertz (1857-1894). One hertz (Hz) is equal to 1 cycle/second. See also Flicker.

HI-8

Consumer or professional video format that has a higher resolution than standard 8mm. It is backward compatible with 8mm. Hi-8 can record with 400 line horizontal resolution.

Hi-Fi

For high fidelity. General term used to describe sound quality approaching the limits of human hearing. VHS Hi-Fi places a stereo signal with greater range and negligible hiss across the width of the tape. The result is sound quality approaching compact discs. 8mm and Hi8 camcorders offer AFM Hi-Fi sound as well.

Hi-Fi Stereo Sound System (TV)

The stereo sound system built into TVs that incorporate an MTS/SAP decoder, permitting reception and reproduction of broadcast stereo television programs, as well as Second Audio Program transmissions (where available). In some models, it also features spatial stereo sound; bass boost for enhanced low frequency reproduction; and individual bass, treble and balance controls for personal listening preference sound tailoring. Dbx noise reduction eliminates hiss and high-frequency interference from the stereo sound reproduction.

Hiss

Noise that sounds like prolonged sibilant sounds. This can occur from bad cassette tape, vinyl albums, live snakes, etc.

HUE (Tint Control)

Red, yellow, blue, etc. are hues of color or types of color. Hue is the parameter of color that allows us to distinguish between colors. "Attribute of a visual sensation according to which an area appears to be similar to one of the perceived colors, red, yellow, green, and blue, or to a combination of two of them" [CIE 845-02-35].

HUM

Unwanted coupling of a 60 Hz power sine wave into other electrical signals. In audio, a "hum" can be heard; in video, waves in the picture.

Hz (Hertz)

Frequency in cycles per second.

IC
Integrated Circuit - Combining many circuits into one module.

ICIA
International Communications Industries Association.

IDTV
Increased Definition Television - Example: scan doubling

IEC:
International Electrotechnical Commission, Geneva, Switzerland. The IEC and its affiliated International Organization for Standardization (ISO) are the two major global standards-making groups. They are concerned with establishing standards that promote interchange of products, agreement upon methods of evaluation, and resolution of nonfunctional differences among national standards. They are structured as an international federation of the more than 50 national standards organizations. The USA is represented by the American National Standards Institute (ANSI). cf. CCIR; IS0.

IEEE:
Institute of Electrical and Electronics Engineers, New York. The IEEE is an association of 33 technical societies. Those of potential interest in electronic production include the following: BT-02, Broadcast Technology; CAS-04, Circuits and Systems C-16, Computer C-19, Communications; CE-08, Consumer Electronics; LEO-36, Lasers and Electro-Optics and 5P-0I, Signal Processing.

Impact Isolation Class (IIC)
A system for rating the ability of a structure to isolate impact noise (i.e. footsteps, and other vibrational disturbances). Normally used in reference to floor and ceiling constructions, the IIC method utilizes whole positive numbers for rating purposes.

Impact Noise
The noise heard as a result of vibrations transferred through the structure of a room. Foot thumps are impact noise.

Impedance (Z)
The opposition or "load" to a signal. Circuits that generate audio or video signals, are designed to work with a certain "load", or impedance. Typical video impedances: 75 ohm or High Z. Also see High Impedance and Low Impedance.

The amount of resistance to current. A higher impedance rating indicates a higher resistance to the flow of electrons. In loudspeakers, a device with a lower impedance rating puts greater demands on the power amplifier.

Unit of AC resistance. For proper operation of an amplifier, the input impedance must match that of the amplifier.

Impedance-Matching

When connecting devices in a system, it is important that the impedance specifications are adhered to. If impedances are not matched, there could be undesirable results, such as: loss or distortion of the original signal, reflections, etc.

Improved Definition TV

General term used in Japan and Europe for TVs that give an improved picture from a standard TV signal.

Impulse

A very short, transient, electric or acoustic signal.

In Phase

Two periodic waves reaching peaks and going through zero at the same instant are said to be "in phase".

INFOCOMM - (trade show)

The major audio-visual (presentation) industry trade show.

Infrared Remote Control Set (22ER9054)

The CDI450BK and CDI550DV are equipped with an input port on the front of the units for wired remotes. This accessory turns these players into infrared systems. The IR receiver is external to the unit, and plugs into the front port on the players. The infrared remote controls that comes with the accessory is the 22ER9054.

Infrared:

The portion of the spectrum whose wavelengths are invisible to the human eye (range = .76 microns and higher).

InSight

See StarSight

Integrated Amplifier

Combined preamplifier and power amplifier.

Intensity

The amount of sound energy radiated per unit area, measured in watts per square centimeter.

Interactive TV

Possible applications are: Pay-per-view (movies, sports, rock concerts etc.); Game Shows, including the possibility of winning prizes); Plot decisions; Polling; Purchasing, home shopping; Consumer Information, e.g. program guides, study courses; Target Group Information, e.g. information for doctors provided by Pharmaceuticals.

Interactive Video

The fusion of video and computer technology. A video program and a computer program running in tandem under the control of the user.

Interlaced

A method of sending a video image to the monitor which scans alternating video lines in one vertical sweep of the electron beam and requires two vertical sweeps to "paint" a picture on the screen. An Interlaced monitor will have increased flicker at the interlaced frequency, but is less expensive to manufacture than a non-interlaced monitor. All monitors operating at standard resolutions less than EVGA (1024x768) are always non-interlaced.

Inverse Square Law

Any condition in which the magnitude of a physical quantity follows an inverse relationship to the square of the distance. In pure spherical divergence of sound from a point source in free space, the sound pressure level decreases 6 dB for each doubling of the distance.

IR

Infra-Red - A type of wireless transmission standard using infrared light.

IRD

Integrated Receiver Decoder

ISDN

Integrated Services Digital Network

Isolation

To separate airborne or mechanically transmitted energy.

J

JOG-SHUTTLE CONTROL

VCR feature. On the remote (or on the console), a wheel to control tape speed and direction - forward or back by twisting right or left. With some, the extent of the turn determines the speed - from single frame advance, through slow motion and high speed scan. Useful for skipping ads, editing, or locating scenes.

JPEG

(Joint Photographers Experts Group) JPEG is the most popular video compression scheme yielding compression ratios between 5:1 to 20:1. An intraframe compression method, eliminating imperceptible detail from each frame. JPEG groups individual pixels into larger blocks, storing an averaged generalization of the color contents of each. Higher compression ratios use more averaging, until the effect becomes visible. Contrast with MPEG.

K

K

An abbreviation for kilobyte. A kilobyte is 1,000 bytes. In computer memory sizes, the numbers are rounded down. e.g. 1k byte = 1024 bytes.

Kaleida Labs

JVC, Apple and IBM. Group working to develop a software multimedia platform (ScriptX).

Kell effect:

1. Vertical resolution of a scanned image subjectively evaluated is consistently shown to be less than the geometrically-predicted resolution. Observations are usually stated in terms of the ratio of perceived television lines to active lines present in the display.

2. From the time that R. Kelt published his studies (conducted on a progressive scanned image), there have been numerous numerical values and substantiating theories proposed for this effect. The range of results suggests that many details of the experiments influence the result and make defining a single "Kell factor" impossible, Reported experimental results range at least between 0.5 and 0.9. In an otherwise comparable display, the "ratio" is lower for interlaced scanning than for progressive scanning. cf. interlaced scanning; progressive scanning; resolution, visual.

Kelvin

This is a system or scale used for measuring temperature. Absolute zero is 0 Kelvin or 273 C. The "color" of white light is expressed in terms of degrees Kelvin, the color of light emitted when an ideal object is heated to a particular temperature.

Key Channel:

See alpha channel.

Key Effects

Cutting one image into another on screen, especially lettering, using a special effects generator. See overlay.

Key Light

Lamp providing the main directional source of lighting, placed in front and to one side of the subject.

Keying

The process of replacing part of one video image or graphic with video from another image.

Keystone –

The distortion of the projected image when the screen is not perpendicular with the center line of the projected image.

Keystone Effect

A distorted picture where one edge is not the same dimension as the opposite edge. Typically results when the image is projected at an angle. In stone buildings, the tapered stone at the top of an arch was the "key" that prevented the arch from falling.

Khz/Kilohertz

1,000 Hz increments

Kilohertz (Khz)

Thousands of Hertz, or a frequency rate in units of thousands of cycles per second. For example, CGA's horizontal scan rate is 15.75 kHz or 15,750 hertz (Hz).

Kludge

(kloodge) Hardware or software that works, but is inelegant. Something thrown together quickly to meet a specific need.

Knee:

(video) By convention, the circuitry introducing white compression into the opto-electronic transfer function and thereby modifying the curve for a more gradual approach to white clip. cf. shoulder; transfer function; white compression.

Knoop Hardness:

A measure of hardness determined by the depth of penetration of a diamond stylus under a specified load. Similar to a Rockwell hardness test.

L

Laser Disc

A video disc that can be created to store analog information. Once mastered, the disc can be read using a laser.

Law of the First Wavefront

The first wavefront falling on the ear determines the perceived direction of the sound.

LCD (Liquid Crystal Display)

A device that displays text and graphics on a flat screen that uses no projected light or illumination.

LCD PANEL

A device used to project video images through a Liquid Crystal Display and an overhead projector onto a large screen.

LCLV Liquid Crystal Light Valve.

The imaging device in certain types of projectors. The LCLV is the part of the projector that actually contains the liquid crystal material, the reflective surface, the light blocking layer and the photo-sensitive layer.

Leakage

Any unwanted sound picked up by (or "leaking" into) a microphone from another instrument or loudspeaker.

LED

Light-Emitting Diode

LEDE

Live end dead end. An optimal acoustical treatment plan for rooms in which one end is highly absorbent and the other end reflective and diffusive. In front of the listening position is the dead end, behind the listening position is the live end.

Lenticular-

Screen surface comprised of a geometric embossing pattern. The shape of the pattern affects view\angle performance and reflection of ambient light.

Lenticular Screen

A large series of parallel lenticulations cut vertically into the screen surface to improve horizontal dispersion.

Lenticulation

A cylindrical lens which causes light passing through it to be dispersed perpendicular to its axis.

Letterbox

Transmission of wide aspect ratio in standard 4:3 format with black bars on top and bottom of the picture.

Light Valve Projectors

Image projection systems that utilize light from a projection lamp filtered through an imaging device (similar to a film projector) as opposed to a CRT projector where the imaging device and the light source are identical, the CRT.

Lightness:

"The brightness of an area [subjectively] judged relative to the brightness of a similarly illuminated area that appears to be white or highly transmitting" [Hunt].

Line Doubler

Device used to improve the apparent resolution of a video image. By electronic image enhancement techniques this device seeks to recreate details of the image lost in the recording process. They require projectors with computer display capability and work with varying degrees of success.

Line Level

A Preamplified signal, in contrast to microphone level. The actual signal levels vary, with nominal microphone level being -50dBM and nominal line level being +4dBM.

Line, Television:

1. Television images are scanned in a sequence of horizontal lines, beginning at the upper left corner, and reaching the bottom right corner at the end of the field. Thereupon the scan is returned to the upper left corner to begin the next field. As a consequence of the line structure, all television images are sampled vertically. Within a line, the signal may remain analog or be sampled digitally.

2. A television line is also a measure of time, representing the interval allocated to one line. (In the U.S. system 525/59.94/2:1, the line duration is 63.5 s).

3. Television lines also function as a geometric measure, with resolution (both vertical and horizontal), for example, specified in terms of "lines per picture height." Since both "black" and "white" lines of a resolution chart are counted, two television lines equal one cycle of the electrical wave form, cf. line, active; line pair, optical; lines, active horizontal; lines, active vertical; resolution, image; resolution, visual.

Linear Sound

Sound is recorded onto a strip along the edge of the videotape, or in the case of stereo, onto two strips, one for each channel.

Linearity

The ability of a display device to produce the an object the same size anywhere on the screen. e.g. Poor linearity may show a line of text at one size when it is at the top of the screen, but at a different size when the same line of text is at the bottom of the screen.

Liquid Cooled CRT

Due to the high light output of the CRT's used in projection systems, a liquid covers the face of the CRT to cool it and equalize the temperature across the entire face, preventing weakening of the glass and ultimately cracking and implosion of the glass tube.

Liquid Crystal (LCD) Liquid Crystal Display.

An imaging system using a material called a liquid crystal. The molecules of a liquid crystal twist when electric voltages are applied to them. This twisting changes to polarization of light passing through the crystal. By placing a stationary polarizer in the light path, the amount of light passing

through the system can be controlled by changing the voltage on the liquid crystal and thus the amount of twist in the molecule.

Liquid Crystal Light Valve Projectors

A consortium of Hughes Aircraft and JVC claims that this technology will provide high resolution ultra-bright images, even under normal room ambient light conditions allowing for up to 10m wide picture.

Liquid-Cooled/Liquid-Coupled Tube/Lens System (Projection TV)

Yields a brighter picture, with greater contrast and superior picture detail. The liquid coolant has high heat transfer capability, while optically connecting the tube to the lens.

Live

A reverberant acoustical condition, usually used in reference to a room whose many reflective surfaces encourage a lengthy reverberation time.

Any event being transmitted as it occurs.

LNB

Low Noise Blocker/Low Noise (block) Converter

LNC

Low Noise (block) Converter

Local Access Cable TV

Cable systems created Local Access as a way of allowing the local public access to the system to present their views, opinions and messages. Most provide equipment and airtime free of charge to anyone wishing to use it. Some systems charge small fees for equipment upkeep purposes.

Loop-Through Inputs

A feature of all broadcast-style monitors. Most consumer monitors offer only one input jack. If you need to use the same video source elsewhere, this limitation forces you to buy a video amplifier with more than one output.

Loudness Control

Many pre-amplifiers, receivers, and integrated amplifiers incorporate Loudness controls. Activating the circuit increases the bass response. It is designed for use primarily when listening at low volume levels. At low volume the human ear is less sensitive to low frequencies.

LPTV

Low-Power Television. LPTV is a form of UHF broadcast available in the U.S. These stations put out a very low power signal that reaches a small broadcast area - usually a single metropolitan area.

Lumen

Unit of measurement of the quantity of light output by a device. Is calculated by measuring the measuring the footcandles and multiplying by the area of the projection screen. See ANSI and Brightness (peak)

Luminance

Brightness. The black and white component of a video signal. The amount of luminance is directly related to light intensity or brightness.

Luminance is an objective measure of the visible radiant flux, weighted for color by the CIE Photopic Spectral Luminous Efficiency Function (i.e , as evaluated by the CIE standard photometric observer). From the basic definition, several derivative applications of the term have become common. (See cross-references.) The subjective response to luminance is brightness. cf. luminance, constant; luminance, physics; luminance, television; luminous flux; signal, luminance.

LUX

The amount of light per square meter, incident on a surface. 1 lux = 1 lumen/square meter = 0.093 footcandles

Metric unit of measurement of the quantity of light output hitting a surface. Is calculated by measuring the measuring the candela and multiplying by the area of the projection screen. See ANSI and Brightness (peak).

Ten lux equal approximately one footcandle.

M

Magnetic Soundtrack

Narrow stripes of oxide material (similar to the coating on recording tape) that are added to a developed release print, then recorded in real time with the film's sound. For playback in the theatre, projectors are equipped with magnetic heads like those on a tape recorder. Introduced in the 1950s to provide stereo sound in the cinema, magnetic offers very high sound quality. The prints themselves and theatre maintenance are costly, however, so today there is just only one magnetic format remains, six-track 70 mm.

Magnetically Focused CRT

This type of CRT uses an electro-magnet to create the magnetic field required to focus the electron beam in the CRT. This results in a brighter image with increased resolution across the entire picture.

Masking

The process by which one sound is used to obscure the presence of another.

1. (video) "A process to alter color rendition in which the appropriate color signals are used to modify each other. Note: The process is usually accomplished by suitable cross coupling between primary color-signal channels" [IEEE 100].

2. (photography) Comparable control of color rendition is accomplished by the simultaneous optimization of image dyes, masking dyes, and spectral sensitivities.

3. Masking is one way of partial compensation for photo-receptor cot sensitivity, nonoptimum color filters, nonid eal display phosphors, unwanted dye absorption, etc. cf. color match, corresponding; color match, metameric.

Masking Borders –

The black portion surrounding the viewing area of a screen.

Mass Law

The law of physics which states that a material's ability to reduce the transmission of sound is proportional to its weight. According to the mass law, to decrease a wall's transmission by 6 dB it is necessary to double the thickness of the wall. (see inverse square law)

MCI

Media Control Interface. A standard for compatibility. MCI-compatible boards usually carry the MPC logo.

MDA

Monochrome Display Adapter. Resolution 720 x 350.

MDS

Microwave Distribution Service to home subscribers. See also MMDS

Mechanical Coupling

To rigidly connect two isolated objects. Also referred to as a mechanical short. Example: Two isolated wall partitions are mechanically coupled if rigid electrical conduit is fastened to both

walls. Air ducts and plumbing are prime candidates for causing mechanical shorts. When an acoustically isolated room "leaks", it is often a mechanical short created during construction.

Mechanically Decoupled

The elimination of mechanical shorts. See Mechanical Coupling. Typically accomplished by inserting a flexible loop between rigid components. Flexible metallic conduit (greenfield) is used for decoupling electrical conduit, accordion shaped canvas collars decouple rigid air-ducts and flexible tubing does the same for plumbing. For structural decoupling non-compressible foams like Ethafoam 222 or AP Armaflex separate rigid components.

MHz (as in 8 MHz)

An abbreviation for megahertz. This is a unit of measurement and refers to a million cycles per second. Bandwidth is measured in megahertz.

MIC

Microphone. A device used to convert sound into audio signals.

MIDI

Musical Instrument Digital Interface. A programming language used to send commands to a synthesizer, which algorithmically mimics a musical instrument or a noise. MIDI is a standard protocol for the interchange of musical information between musical instruments, synthesizers and computers.

Mid-Range (Loudspeaker)

The middle range of audio frequencies, from approximately 500 to 4000 Hz. The most important audio frequency region, it includes all the frequencies necessary for intelligibility.

MILLI (m)

Abbreviation for one thousandths. Example: 1 ms = 1/1000 second.

Mini Disc MD

A 2.5-inch optical record and playback system that approaches the sound quality of a Compact Disc.
A process of moving signal information to other frequencies to allow it to be transmitted. Example: MODEM.

MIPS

Million Instructions Per Second - The rate at which a computer executes instructions.

MMDS

See Multichannel Microwave Distribution Service

Monitor

A) A television that receives its signal directly from a VCR, camera or separate TV tuner for high quality picture reproduction. It does not contain a channel selector. B) A special type of television receiver designed for use with closed circuit TV equipment. C) Device used to display computer text and graphics.

The listening room reference loudspeaker.

Monitor Output (Receivers)

Some Audio/Video receivers incorporate an output jack for connecting the receiver to the video input of a TV set. This allows you to use the receiver to switch between external video sources such as a VCR, laser disc, or CD-i player.

Monitor, Reference:

A reference monitor is one employed for decisions on image quality. Achieving controlled reproducibility for this application is the primary objective of the specifications for monitor standardization. SMPTE Working Group on Studio Monitors, S17.28, has recognized the great disparity now existing among studio monitors and control monitors, and has noted the confusing variability among decisions based upon visual judgments of program quality as evaluated on different monitors. They are working to identify and recommend specifications for the variables affecting subjective judgments, coming not only from the monitor capabilities, but also from the adjustment of its controls and the bias introduced by the monitor surround and room illumination. cf. monitor standardization.

Mono

Common abbreviation for "monaural", meaning from a single source.

Monochrome Composite Output

Provides a monochrome video output with combined Horizontal and Vertical sync for Composite Video with all the shades of the computer’s monochrome, 8, 16, or 64 color display adapter card output signal.

Monochrome Signal

A "signal color" video signal -- usually a black and white signal, or sometimes the luminance portion of a composite or component color signal.

Motion Artifacts:

In all temporally-sampled systems (i.e., both photographic and electronic), realistic motion reproduction is achieved only with sampling below the Nyquist limit. The subjective response to motion artifacts is complex, influenced by the various degrees of smoothing and strobing affecting temporal and spatial resolution - integration and tag in the sensing, recording, and display elements; sampling geometry and scanning pattern; shutter transmission ratio; perceptual tolerances, etc. (Motion appears "normal" only when significant frame-to-frame displacement occurs at less than half the frame rate; i.e., "significant motion" distributed over at least two frames.) Motion artifacts most frequently observed have their origins in the following: (1) image components with velocity functions extending beyond the Nyquist limit (such as rotating, spoked wheels), (2) motion samples with such short exposures there is noticeable frame-to-frame separation of sharply defined images (such as synchronized flash illumination), (3) asynchronous sampling of intermittent motion (such as frame-rate conversions). A considerable number of motion artifacts appear so frequently as to be accepted by most viewers. cf. artifact; conversion, frame-rate; judder; Nyquist limit; transform, systems.

Motion Picture Expert Group

The world standard for compression and decompression of digital video information. MPR-II
A standard originally proposed by the Swedish Department of Labor, which set maximum levels of electromagnetic radiation emitted by monitors. MPR-II defines maximum permitted electrostatic, magnetic and electric field levels measured at a distance of 50 cm from the center of the monitor. See Anti-Glare, Anti-Static Coatings and TCO.

MPEG (Motion Picture Experts Group)

A standards committee under the auspices of the International Standards Organization working on algorithm standards that will allow digital compression, storage and transmission of moving image information such as motion video, CD-quality audio and control data at CD-ROM bandwidth. The MPEG algorithm provides inter-frame compression of video images and can have an effective compression rate of 100:1 to 200:1. Motion Picture Experts Group) MPEG is a video compression scheme using interframe compression to remove common elements or redundancies between video frames and applies JPEG-like compression to the rest. Intel's DVI is similar to MPEG in that its interframe method re-uses redundant image data.

MTS

Multi-channel Television Sound broadcast. An MTS Stereo broadcast, a Second Audio Program (broadcast in second language as well as the main language), or both at the same time.

MTS/SAP Decoder (TV)

Receive and record off-air television stereo broadcasts and second audio program transmissions, where available.

Multichannel Microwave Distribution

Service to subscribers (Wireless cable systems) Also referred to as MDS (Microwave Distribution System) and LMDS (Local Multipoint Distribution Service) In the US the FCC has allocated a 28GHz wavelength for the system. Companies active with MMDS: Bell Atlantic, as partner of "CellularVision", a company carrying out trials in New York City.

Multimedia

Combining static media (such as text and pictures) with dynamic media (such as sound, video, and animation) on the same system.

Multiple Frequency Projector

Video / Data projector designed to work with sources have different horizontal scan rates.

Multiple Service Operator

A service company offering multiple services. An example is Cable TV, which offers the major networks in addition to pay television.

MUSE

See Multiple Sub-Nyquist Encoding

Mute

A switch on a console that silences the input/output level.

MUX

Multiplex

N

NAB (trade show) National Association of Broadcasters.

The major trade show for the television industry in the United States. Approximately 30% of the attendees are broadcasters, the balance are dealers and non-broadcast users of television equipment. Held annually in April in Las Vegas.

National Cable Television Association (USA)

Organization of cable operators.

NCTA

See National Cable Television Association

Near Video On Demand

Within a maximum wait time of 10-15 minutes the subscriber is able to view the program material selected. System is based on time-shifted digital parallel transmission of the movie.

NEMA

National (USA) Electrical Manufacturers Association

Networking

Two or more devices (or people) that can communicate with each other and share resources.

NIH

National (USA) Information Superhighway

Noise

Unwanted sound. Interference of an electrical or acoustical nature. Random noise is a desirable signal used in acoustical measurements. Pink noise is random noise whose spectrum falls at 3 dB per octave: it is useful for use with sound analyzers with constant percentage bandwidths.

Noise Criteria (NC)

Standard spectrum curves by which a given measured noise may be described by a single NC number.

Non-Interlaced

A method of sending a video image to the monitor which scans each successive video line of a picture so that a full picture is "painted" onto the screen in one vertical sweep of the electron beam. At any given resolution, non-interlaced modes are preferable to interlaced modes but are more expensive to generate. Standard VGA (640x480) and SVGA (800x600) are always non-interlaced. See Interlaced.

Normal and Optimal CD to Cassette Edit (CD)
Some CD changers include these recording modes to assist in recording to a cassette tape. In the NORMAL EDIT mode the changer will determine which tracks fit on each side of the tape and will stop after the last track. The tracks will be recorded in the order in which they appear on the CD(s). In the OPTIMAL EDIT mode the changer calculates the combination of tracks in the best order to optimize the use of available recording time.

Notch Filter

A filter of extremely narrow bandwidth used to eliminate discrete frequencies. Notch filters are usually tunable, and can be used to eliminate specific room or instrument resonances.

NTSC

National Television System Committee. 1. NTSC-I in 1941 established 525/60/2:1 monochrome television in the U.S.

2. NTSC-II in 1953 established 525/59.94/2:1 composite color format television in the U.S. with two color-difference signals [labeled / and Q] quadrature-modulated onto a color subcarrier and added to the luminance signal.

3. NTSC is often used as the convenient name for North American television. cf. CCIR; chrominance signal; color-difference; colors, primary; composite color; luminance; luminance signal; SMPTE 17OM; SMPTE 244M.

The video standard used in North America, Japan, Mexico and other countries, 525 lines interlaced at 60 fields (30 frames) per second.

NTSC Color Bars

A pattern generated by an NTSC generator consisting of eight equal width color bars. Colors are white (75%), black (7.5% set-up level), 75% saturated pure colors red, green, and blue, and 75% saturated hues of yellow, cyan, and magenta. (Mixtures of two colors in 1:1 ratio without third color).

NTSC RGB

Interlaced red, green, and blue video signals timed to NTSC standards. Refers to three monochrome signals representing the primary colors of the image. This is a superior signal format to composite video which is one signal encoded from the three signals. An NTSC RGB signal differs from a component video signal which consists of Y, R-Y, and B-Y signals.

NVOD

See Near Video On Demand

O

Octave

A reference point for frequency or pitch; e.g. an 880 Hz tone is one octave higher than a 440 Hz tone and one octave lower than a 1760 Hz tone. An increase of one octave doubles the frequency, while dropping one octave reduces the frequency by one-half.

Octave Band

A frequency spectrum which is one octave wide (i.e. all frequencies from 125 Hz to 250 Hz). In recording and audio testing the octave itself is divided into thirds for better accuracy.

Ohm

A unit of electrical resistance or impedance calculated by dividing the voltage applied to a circuit by the current (amperes) flowing through it. The higher the number, the greater the resistance or impedance.

Omni-directional

Equally sensitive to sound from all directions.

One Hundred Eighty-One (181)-Channel Tuner (TV and VCR)

The Digital Quartz tuner incorporated into Magnavox TVs and VCRs is capable of receiving up to 181 channels, including UHF, VHF and 113 cable channels, without the inconvenience and expense of a cable company decoder/converter, on non-scrambled cable systems. Channel tuning is by random access with the remote control transmitter, with instantaneous tuning of any available channel; or scan tuning, up and down, by remote or at the set.

One Inch (1")

One inch videotape used in broadcast production, capable of delivering 525 horizontal NTSC lines.

Optical Soundtrack

A photographic strip adjacent to the picture on a 35 mm movie print, varying in some way with the variations in sound (see Figure 1). Analog optical soundtracks vary in width, while digital optical soundtracks have patterns of dots (see Analog vs. digital and Variable area). Because optical soundtracks are printed at high speed at the same time as the picture, the release prints are economical, as opposed to magnetic prints whose soundtracks are recorded in real time as a separate step.

As the film is pulled through the projector's soundhead, a narrow light beam passes through the moving soundtrack, which causes the intensity of the beam to vary. The varying light falls on a sensor to create electrical signals for the theatre's loudspeakers to convert back to sound.

Output

The product of an operation by a device going to some external destination, such as another device, a video screen, image or hard copy.

Overscan/Underscan

Most consumer TVs or monitors don't let you see all the video picture; some is obscured at the top, bottom and sides of the tube. With a monitor offering low overscan or an underscan switch

you can see all the video area. Without this feature, something not visible on your monitor may be annoyingly plain on the screen of your client.

Overtone

A component of a complex tone having a frequency higher than the fundamental.

P

PAL

Phase Alternative Line system. The television broadcast standard for most of western Europe. Based on the 50 Hz power system, it displays 625 lines interlaced at 50 fields per second (25 frames per second). By reversing the relative phase of the color signal components on alternate scanning lines, this system avoids the color distortion that appears in NTSC reception. PAL is not compatible with NTSC or SECAM, though conversion between the standards is possible. Video products to be used in Europe require compatibility with PAL standards.

A composite color standard similar to NTSC, except that the V-axis subcarrier reference signal inverts in phase at the horizontal line rate (i.e., phase alternation at the line rate of the R-Y component of the chrominance signal.) Most applications are in the 625/50/2:1 systems. cf. CCIR; NTSC; SECAM.

Passive Absorber

A sound absorber that dissipates sound energy as heat.

Passive Equalizer

An equalizer which does not contain amplification in the equalization circuit. As a result this type of equalizer suffers an inherent "insertion loss".

PCB

Printed Circuit Board

PCM

Pulse Code Modulation

Pel

The smallest graphic unit that can be displayed on the screen, usually a single-colored dot. Pel is the abbreviation for picture element. Also known as pixel.

Perception, Visual:

"The interpretation of impressions transmitted from the retina to the brain in terms of information about a physical world displayed before the eye. Note. Visual perception involves any one or more of the following: recognition of the presence of something; identifying it; locating it in space; noting its relation to other things; identifying its movement, color, brightness, or form" [IEEE 100].

Persistence

In essence, the "staying power" of a lighted phosphor, since a phosphor begins to dim after it’s excited by the electron gun(s), a long-persistence screen allows the phosphor to dim more slowly.

Phase

(1) A stage in a periodic process; a point in a cycle. (2) The relationship between two periodic signals or processes. (3) The amount by which the cycles of one wave precede or lag behind the cycles of another wave of the same frequency. (4) Some fraction of a wave cycle (measured from a fixed point on the wave).

Phon

The empirical unit of loudness. Since the ear has different sensitivities at various frequencies (Fletcher-Munson), it does not hear equivalent sound pressure levels as being equally loud.

Phosphor

The chemical coating on the inside of the CRT screen that generates light (monochrome or color) when struck be an electron beam. Each dot on the screen is actually a phosphor that glows for a period of time. See Persistence.

Picture Element:

"The smallest area of a television picture capable of being delineated by an electric signal passed through the system or part thereof. Note: It has three important properties, namely Pv, the vertical height of the picture element; Ph, the horizontal length of the picture element; and Pa, the aspect ratio of the picture element. In an analog system Pv = 1/N, where N is the number of active scanning lines in the raster, Ph = trA/tc, where tr is the average value of the rise and delay times (10% to 90%) of the most rapid transition that can pass through the system or part thereof, tc is the duration of the part of a scanning line that carries picture information, and A is the aspect ratio of the picture" [IEEE 100]. cf. pixel; resolution, image; resolution, visual.

Picture Height:

In a scanning standard, the number of raster lines that contain the vertical extent of a white flatfield between the 50% response points, top and bottom. cf. aperture, production; lines, active horizontal; lines, active vertical; picture width.

Picture Noise

Graininess and poor color on the videotape caused by shooting in very poor light; also caused by generation loss. Snow.

Picture- Outside- Picture (Pop)

POP takes advantage of the extra space on either side of a 4x3 image and displays the smaller window in that area, leaving the main image unobstructed. See picture-in-picture. Also see widescreen.

Picture-In- Picture (Pip)

Many 16x9 TVs feature PIP capabilities. This is also what you see on a monitor when using a TV capture card. The display of another channel in a small window that appears somewhere in the larger image.

Pin Cushion

The inward or outward (curved) appearance of the edges of a display.

Pink Noise

A uniform noise level over a given bandwidth, usually in the video frequency range.

Pitch

The human perception of frequency. In general, the higher the frequency, the higher the pitch.

The center dimension of adjacent conductive traces, dots, or connector holes.

Pixel:

1. Originally an acronym for picture element. Now increasingly restricted to defining the digitized sampling of images.

2. A pixel is the digital representation of the smallest area of a television picture capable of being delineated by the bit stream; i.e., the digital value or set of values that defines the characteristics of a picture element. A pixel of a full color image is represented by a minimum of three components, reflecting the trichromatic nature of human vision. A pixel of a monochrome image may be represented by a single component.

3. Pixels may carry additional information such as transparency, etc. 4. "The total number of picture elements in a complete picture is of interest since this number provides a convenient way of comparing systems" [IEEE 100]. cf. picture element; resolution, image; resolution, visual; pixels, square; post-production.

(PIX [picture] ELement) A pixel is the smallest display element on a video display screen. A screen is broken into thousands of tiny dots, and a pixel is one or more dots that are treated as a unit. A pixel can be one dot on a monochrome screen, three dots (red, green and blue) on color screens, or clusters of these dots.

Pixelization

The process of digitizing a picture by splitting the image into picture el ements. LCD Matrix projectors take this a step farther by separating each of these elements with a black stripe, giving a screen door effect on the screen.

PLC

Power Line Carrier

Plenum Cable

Cable having a covering that meets the UL specifications for resistance to fire.

PLL

Phase Locked Loop

Pluge (Picture Line Up Generation Equipmen)

This is a name of a test pattern that assists in properly setting picture black level. PLUGE can be part of many test patterns. The phrase and origination of the test signal are both credited to the BBC.

Polarity

The relative position of the high (+) and the low (-) signal leads in an audio system.

Polarization of Light:

The process of affecting light so that its waves vibrate in one plane only; reflection, double refraction, selective absorption and scattering are all ways to polarize light.

POTS

Plain Old Telephone Service

PPV

Pay Per View

Pre-Amplifier

The control center of a Hi-Fi system. Not only amplifies source inputs to a suitable level for power amplification, but also provides source selection, equalization, volume, tone, balance, and other controls that affect the sound characteristics.

Presentation Device

A general term used to define a video projector or data monitor.

Primary Colors

Colors, usually three, which are combined to produce the full range of other colors within the limits of a system. All non-primary colors are mixtures of two or more of the primary colors. In television, the primary colors are specific sets of red, green and blue.

Primary Reflections:

The principal, intended reflections at optical surfaces, as differentiated from secondary, usually unintended or unwanted reflections occurring in an optical system.

Primestar

Medium power Satellite System operating in the USA. 90cm dishes needed.

Progressive Scan

By means of electronic circuitry additional information is composed in order to obtain a better image. This additional information was never transmitted, but is constructed by comparing previous and actual received picture information. FIELD PROGRESSIVE SCAN: In between two received fields an artificial field is composed and displayed. Frame memories are needed. LINE PROGRESSIVE SCAN: In between two lines an artificial line is composed and displayed. This feature improves vertical resolution. Will be part of the USA HDTV system.

Projection axis

The direction of an imaginary line extending from the center of the projection lens through the screen's center.

PSTN

Public Switched Telephone Network

Psychoacoustics

The study of the perception of sound.

PTV

Pay Television

PTV

Projection Television

Pulse Modulation:

The process of periodically or intermittently varying the amplitude of a pulse of light.

PWM

Pulse Width Modulation

R

Rarefaction

A decrease in density and pressure in a medium, such as air, caused by the passage of a sound wave.

RC

Remote Control

RC Time Code

This Sony-developed system is rewritable, as its name declares, but is proprietary and available only on certain 8mm and Hi-8 cameras and decks. Thus only one or two consumer camcorders generate RCTC, and few edit controllers support it. Similar to SMPTE but doesn't require an audio track. Its accuracy is said to be comparable, or can exceed, the + or - 2 frames standard set by the Panasonic protocol.

RCA Connector

A connector typically used for audio and video signals, with some professional equipment and most consumer equipment. Compare BNC connector, XLR connector.

Reactive Absorber

A sound absorber, such as the Helmholtz resonator which involves the effects of mass and compliance as well as resistance.

Reactive Silencer

A silencer in air-conditioning systems that uses reflection effects for its action.

Rear Channel Preamp Output (Receivers)

Because Dolby Pro-Logic Receivers create a soundfield made up of four components (Left, Center, Right and Rear channels), some receivers incorporate this feature to give the user flexibility in their setup. The rear channel pre-out allows you to connect the sound from the rear channel to a separate power amplifier for more amplification or further processing.

Rear Screen Console

A one peace unit that includes projector, screen, mirror and sound system. Ideal for homes or businesses where permanent installation is not possible or wise.\

Rear Screen Projection

A projection technique where the image is projected on the back side of a translucent material. The viewer is on the opposite side of the screen. See front projection.

Receiver

A combination of a tuner and amplifier.

Reflected Sound

Sound arriving at the listening location after bouncing off one or more of the surrounding surfaces. Because sound waves lose energy according to the distance traveled and number of reflections encountered, reflected sound wave are always of less intensity than similar waves arriving directly from the source. The sum total of all reflected waves determine the room's reverberation time and acoustical character.

Reflection:

The return of light from a surface with no change in wavelength.

The bouncing of a sound wave off of a surface. Sound is reflected much as light is reflected, with the angle of incidence equaling the angle of reflection.

Reflections

Energy that is not absorbed by the load (or termination), and is reflected back. Reflection Signals can occur when the impedance does not match (because of wrong termination or mixing of cable impedances). Some of the undesirable results of reflection include: Y/C delays, color smearing, ringing on luminance (but not on color), etc.

Reflective Light Valve

Light Valve system where the light reflects off a mirror in the light valve as opposed to a transmissive light valve where the light passes through the valve.

Refraction:

The change in direction of a ray of light as it passes through two media through which light travels at different speeds.

The bending of sound waves traveling through layered media with different sound velocities.

Refractive Optics Projector

A projection system using lenses as opposed to mirrors to focus the light.

Refresh Rate

The number of times per second that a complete image is painted on the screen by a monitor or TV. Refresh rates less than 70 Hz produce an annoying flicker which can contribute to eye strain.

Resolution

The number of pixels that can be displayed on the screen. The resolution is specified as the number of pixels in a line multiplied by the number of horizontal lines. Some common resolutions are as follows: MDA (Monochrome Display Adapter) introduced with the first personal computers in 1981, could only reproduce standard ASCII characters of the special IBM character set. The card offered high-quality text reproduction but no graphics. CGA (Color Graphics Adapter) also introduced in 1981 with the first IBM PCs combined text with (limited) color graphics. CGA offered a resolution of 640 x 200 pixels and, since it operated in TTL mode, could display a maximum of 16 colors. Hercules introduced in 1982, reproduced both text and graphics with a resolution of 720 x 350 pixels. EGA (Extended Graphics Adapter) introduced in 1985, offered higher resolution than CGA: 640 x 350 pixels but still only 16 colors. VGA (Video Graphics Array) introduced in 1987, was the first analog card. It offered still higher resolution than EGA: 640 x 480 pixels for graphics and 720 x 400 pixels for text, and a color palette of 256 colors, VGA could also emulate EGA and CGA. SVGA (Super Video Graphics Array) devised by VESA in 1989, offers a resolution of 800 x 600 pixels. XGA-8514A (Expanded Graphics Array) introduced by IBM in 1990, offers a resolution of 1024 x 768 pixels (interlaced) and a color palette of 256 colors. EVGA (Extended Video Graphics Array) introduced by VESA in 1991, offers a top resolution of 1024x768 pixels (non-interlaced) and a refresh rate (70Hz) significantly higher than IBM's XGA-8514A effective rate. High-end graphics adapters, introduced over the last four years for professional workstations, offer top resolutions from 1280 x 1024 to 1600 x 1280, horizontal line frequencies up to 90 kHz and bandwidths up to 200 MHz.

Resonance

The sympathetic vibration of an object (or air column) at a specific frequency when it is excited into motion by a sound wave of similar frequency in the immediate vicinity.

Resonance, Sympathetic

The vibration of a body or air cavity at its natural resonant frequency, having been set into motion by a nearby vibrating source.

Resonant Frequency Dip

The degradation of transmission loss of a barrier at a specific frequency due to inner resonance. The exact frequency at which this phenomenon occurs is a function of the mass and stiffness of the barrier.

Response, Frequency

The accuracy with which a given device reproduces the audible frequency range.

Response, Transient

The response of a device to rapid fluctuations in sound pressure or voltage.

Reverberant field

The area in a room, in which the multitude of decaying reflections has created a reverberant and diffuse condition.

Reverberation

The persistence of sound in a room after the actual source has stopped. This is a result of the multiple reflections of sound waves throughout the room arriving at the ear so closely spaced that they are indistinguishable from one another and are heard as a gradual decay of sound.

RF

Radio Frequency refers to a composite video signal superimposed on a very high (radio) frequency capable of being broadcast through the atmosphere. Standard television sets receive these signals, separate the composite signal from the RF, and then decode and display the composite signal.

Until recently, television sets were designed to receive only RF signals, which were applied to their antenna terminals. VCRs, videodisc players and some computers provide RF signals for use with televisions. The process of mixing composite video with RF, only to have it removed again by the television, further degrades the image quality.

RF Coaxial Cable

Black, insulated, cable commonly used to connect a CD-i player or VCR to a television set.

RF Lead

Radio frequency connection that carries the video and audio signals from the camcorder to the aerial socket on the TV receiver.

RF MODULATOR

A device used to combine video and audio signals onto an RF frequency. Standard RF modulators on 1/2" VCRs produce an RF frequency equivalent to channel 3 or 4.

RGB (Red, Green, Blue)

The basic components of the color television system. They are also the primary colors of light, not to be confused with Cyan, Magenta, and Yellow, the primary pigments. Also called the "Additive Color Process".

RGB is not actually a video standard, but is a standard for computer monitors. It requires a four conductor cable for connecting a monitor to a CPU. In concept, it is similar to S-Video. Three of the conductors carry color information for the red, green and blue components of the image, while the fourth, called the "sync" or synchronization line, carries timing information to be used concurrently with the color information.

RGB Input Projector

A projector with the capability of displaying an image with the red, green and blue portions are separated before the signal is input into the projector.

RGB Monitor

A type of color monitor that receives separate signals for each color (red, green, and blue). See also composite video.

RGB Video

A form of color video signal (red, green, blue) distinctly different from the composite color video used in standard television sets. RGB can be displayed only on a color monitor that has a separate electron gun for each of these primary colors. Some color television sets use only one gun. RGB monitors are noted for their crisp, bright colors and high resolution.

RS 232 Interface:

A term for electronic data exchange cables common in industry.

Rumble

Low-frequency vibration.

S-Video:

S-Video (also called Y/C or component video) is carried on cables that end in 4-pin Mini-DIN connectors. This connector is shown in our photo of P/N 1165. Other types of cables, such as the Apple ADB cable, also use this same connector, although the type of wire used is different. Y/C signals use two separate video signals. The luminance (Y) is the black & white portion, providing brightness information. The chrominance, or chroma (C) is the color portion, providing hue and saturation information.

Hi-8 is another type of 'Y/C' type video signal. A video signal transmitted according to this standard separates color and brightness into two separate channels. This makes for a sharper picture image, with less granularity, on the receiving device.

Some formats, such as Betacam, break down the video signal into even more channels for better picture quality.

Since digitized granularity looks worse than analog granularity, choose S-Video over composite video whenever this is an option. You will also experience less "dropout" with S-Video than with composite video.

Sabin

The measuring unit of absorption; one sabin is equivalent to the absorption offered by one square foot of open window in a room. Sabins are calculated by multiplying the absorption co-efficient of a material times its area.

SAP

Second Audio Program. A separate audio program broadcast in a second language.

SAT

Satellite

Satellite Bands

C-Band= 3.7-4.2 & 4.4-4.7 & 5.725-6.425 GHz (Big Dishes); Ku-Band= 10.95-11.75 & 11.75-12.5(DBS) & 12.5-12.75 GHz; ASTRA starts transmission at 10.7 GHz.

Saturation

The intensity of the color is called saturation. For example, a lightly saturated red looks pink. Fully saturated red is like the red of a crayon. On a display device, it can be adjusted with the Color control. Not to be confused with the brightness, saturation is the amount of pigment in a color, and not the intensity. Low saturation is like adding white to the color.

Scan Converter

A device that changes the scan rate of a video signal and may also convert it from non-interlaced to interlaced mode. A scan converter allows computer graphics to be recorded on videotape or displayed on a standard video monitor.

Scan Rate

The scan rate is the time it takes the electron gun to move across one line of the screen or repeat one entire screen. These values are known as the horizontal and vertical scan rates, respectively. The number of times a screen is redrawn each second. Computer display scan rates differ from standard video scan rates.

Scan-Doubling

The process of eliminating the visible video scan lines by doubling them and filling in the blank lines.

SECAM

Systeme Couleur Avec Memoire. The television broadcast standard for France, the USSR and various eastern European countries. Like PAL, SECAM is based on a 50 Hz power system, but it utilizes a different encoding process and displays 819 lines interlaced at 50 fields per second. The color information is transmitted sequentially (R-Y
followed by B-Y, etc.) for each line and conveyed by a frequency modulated subcarrier that avoids the distortion arising during NTSC transmission. SECAM is not compatible with NTSC or PAL, although conversion between the standards is possible.

Translated as "Sequential Color with Memory". A composite color transmission system that potentially eliminates a need for both a color and hue control on the monitor. One of the color difference signals is transmitted on one line and the second is transmitted on the second line. Memory is required to obtain both color difference signals for color decoding. This system is used in France, Africa, Asia and many Eastern European countries.

Sequential Couleur avec Memoire. A composite color standard based upon line- alternate B-Y and R-Y color-difference signals, frequency modulated upon a color subcarrier. All applications are in 625/50/2:1 systems. cf. CCIR; NTSC; PAL.

Sharpness

The definition of the edges of am image. See Peaking.

Sibilant

Of, characterized by, or producing a hissing sound like that of "S","SH"or "CH".

Signal, Chrominance:

1. "(video) The color- difference signal(s) and the equation(s) for their derivation.

2. (color television) The sidebands of the modulated chrominance subcarrier that are added to the luminance signal to convey color information" [IEEE 100]. cf. CCIR Rec 601- 2; CCIR Rep 624-4; CCIR Rec 709-1; chroma; color-difference signal; television, broadcast; signal, luminance; SMPTE 17OM.

Signal, Luminance:

1. "(video) The signal that describes the distribution of luminance levels within the image and the equation for deriving that information from the camera output.

2. (television, composite color) "A signal that has major control of the luminance. Note: It is a linear combination of gamma-corrected primary color signals" [IEEE 100]. cf. CCIR Rec 601-2; CCIR Rep. 624-4; CCIR Rec 709-1; composite color; luma; luminance, television; SMPTE 17OM; television, broadcast.

Signal-To- Noise Ratio

Measurement in decibels (dB) of equipment capability. The higher the rating, the better. Used for audio and video signals.

The difference between the nominal or maximum operating level and the noise floor expressed in dB.

The ratio, measured in decibels, between the maximum signal level and the noise level with no signal present. The higher the value, the better the sound reproduction.
An S/N ratio can be given for the luminance signal, chrominance signal, and audio signal. The S/N ratio is the ratio of noise to actual total signal, and it shows how much higher the signal level is than the level of noise. It is expressed in decibels (dB), and the
bigger the value is, the more crisp and clear the picture and sound will be during playback.

Simulated Stereo Surround Mode (Receiver)

One of several different modes available in audio receivers and systems to shape the sound to more closely resemble a live performance. With the Simulated setting, you get a simulated spacial surround sound when playing mono source material.

Skypix (USA)

See Primestar

Slap Back

A discrete reflection from a nearby surface.

Smart or Learning Remote

Wireless remote control that can "learn" the commands of different remotes, even those from different manufacturers.

SMATV

Satellite Master Antenna Television

SMPTE

(pronounced simp-tee) time code was developed by the Society of Motion Picture and Television Engineers to provide a standard, highly accurate editing tool for the U.S. broadcast industry (EBU is the European equivalent). A SMPTE time-code generator assigns each frame of video a unique address based on a 24-hour scale. SMPTE time code is either LTC (lit-see) or VITC (vit-see).

Sound

The phenomenon caused by the vibration of the eardrum. The drum itself is set into motion by pressure waves traveling through the air, originating at the sound source.

Sound Digitizer

A device for recording natural sounds and voices and storing them as computer files. Once digitized, the audio can be easily edited or used to create various effects. On the low-end there are products like the Farallon MacRecorder or AppleÍs built-in capability on some Macintosh models. With the AudioMedia card or Pro Tools interface from
DigiDesign, CD-quality sound digitizing is possible with the Macintosh.

Sound Level Meter

A pressure-sensitive device which measures loudness. Sound level meters have several scales corresponding to the sensitivities of the human ear at different frequencies.

Sound Stage

A room or studio that is usually soundproof, used for the production of movies. Or: The psycho acoustic phenomena where a two-dimensional image (left-to-right and front-to-back) is created in the mind suggesting the physical relationship of the listener to the individual performers. A well designed listening space will create the impression of a much larger sound stage than the physical placement of the speakers or the size of the room could allow.

Sound Transmission (Airborne)

The conduction of a sound wave through air. The speed of airborne sound transmission varies with temperature and humidity, and is 1130 feet/second in air at 70øF.

Sound Transmission (Structure Borne)

The conducting of a sound wave through a physical structure (such as a wall, floor, ceiling or door). Because of the increased speeds of sound through common building materials (wood @ 11,700 feet/second, steel @ 18,000 feet/second) as well as the physical connection of such materials in the structural framework of a building, structure borne sound transmission is much more difficult to stop than airborne sound transmission, and thus requires special measures to be dealt with effectively.

Spatial Sound

Pressing the Spatial Sound button on the front of some shelf systems will give a wider stereo effect. This feature is especially handy for listening to music from monaural sources, and to make the sound stage seem wider when listening to the system in a small room.

Stadium Surround Mode

One of several different modes available in audio receivers and systems to shape the sound to more closely resemble a live performance. The Stadium Surround mode recreates the reverberation and open air atmosphere of a rock concert or sporting event when playing stereo (but not mono) source material.

Standing Wave

A sound wave continuously reinforced by its own reflections. Since the standing waves which form in a room are a direct result of the size and geometry of the space itself, each room has a unique set of standing waves. The presence of these waves can easily be determined by a combination of mathematical calculation and audio analysis influencing the character of all sound in a room.

Starsight Formerly Insight (USA)

An Electronic Program Guide. The needed data is carried in the vertical blanking of PBS stations. StarSight is a privately owned company backed by Viacom, Tribune Co, Spelling Entertainment, TV Host/TV Listing (which provides nationwide program listings) and Sumitomo Corp. of Japan.

Stereo

Sound recording and reproduction by more than one (mono) channel. In home music reproduction, "stereo" means two channels (left and right). In the film industry, however, "stereo" is understood to include a surround channel. Proper movie stereo also has a center channel to keep on-screen dialogue centered for viewers seated off to the sides. Thus Dolby-format stereo film presentations comprise at least four channels, with left, center, and right speakers behind the screen, and surround speakers at the rear and sides of the auditorium. Other so-called "stereo" presentations, however, may consist of no more than a single mono speaker behind the screen with some surround speakers at the back.

Since "stereo" came to mean two channel sound in the home, this is why Dolby's film sound technology could be identified simply as Dolby Stereo for the film industry, and why a new term, Dolby Surround, was needed to identify multichannel home sound reproduction.

Sub-Harmonic

An integral sub-multiple of the fundamental frequency.

Subtractive Color Process (Cymk)

Used in color printing, all desired colors are produced by mixing Cyan, Yellow, Magenta and Black. Examples: 0% of C, Y, M and K = white (no ink); 100% of C and M = red; 100% C, Y and M = process black. Also see Additive Color (RGB).

Subwoofer

A loudspeaker dedicated to reproducing the very low bass. Dolby Digital and 70 mm magnetic soundtracks provide separate bass effects channels specifically for playback over subwoofers

Super VGA

A term used to denote higher that VGA (640 x 480) resolution. Most Super VGA computers/cards output resolutions up to 1280 x 1024 and 16 million colors.

For monitors, a graphics standard of 800 dots by 600 lines; this standard has versions with different vertical frequencies.

Super VHS (or S-VHS)

An analog format for recording S-video. This format provides higher resolution than standard VHS by separating the chrominance and luminance onto individual wires. SVHS is not a video transmission signal, rather it is a tape format which is almost always used in decks that support the S-Video signal standard. These two terms, S-VHS and S-Video, are often used interchangeably to refer to S-Video.

Output Level

On select Dolby Pro-Logic A/V receivers, this feature allows the user to adjust the rear speaker level relative to the front speaker level according to the viewing location and individual preference.

Surround Sound

An attempt to recreate the acoustical and ambient information of a particular environment (such as a church, a stadium, a movie theater, etc.) using more than a stereo pair of loudspeakers. A surround sound decoder is a device which extracts the ambient and effects information from a recording or soundtrack and steers this signal to the appropriate amplification and speaker channels.

SVGA

Super Video Graphics Array See Resolution

S-VHS

A high band video recording process for VHS that increases the picture quality and resolution capability. See S-Video.

S-Video

Y/C. Designed for high-end consumer video, this is a signal that separates luminance (y) from color (c) by using two wires. A type of baseband video where the luminance (brightness) and chroma (color) are transmitted as separate signals, increasing resolution and image fidelity. It

offers higher-quality video than NTSC or PAL. S-Video is used by S-VHS, Hi-8 and 3/4" SP equipment.

S-VIDEO INPUT/OUTPUT

Connectors designed to send high-quality pictures between components, usually a high-band camcorder and a TV or A/V receiver. Every S-VHS and Hi8 camcorder comes with an S-video cable to make this connection. It wrings the most picture possible from your equipment. Second best would be the use of RCA-type A/V inputs. If possible, avoid using the RF (or antenna) connection on the back of your VCR.

Symmetrical Room Design

A basic acoustical design to create a desirable listening environment. Draw a line through the center of the room, the left side should be a mirror image of the right. Should the boundaries of a room be asymmetrical, sounds heard by one ear will receive one combination of direct and reflected sound, while the other ear will hear a different balance.

T

Tape Deck

Popular audio cassette player/recorder. Better models feature Dolby Noise Reduction, auto-reverse, programming and easy recording between components.

Telecine

A device for scanning photographic motion-picture images and transcoding them into video images in one of the standardized video formats. Its most common usage is to prepare video tape transfers from completed film programs. Film scanner is a more general term and telecine is frequently reserved for a scanner that operates only in real-time. cf. distribution; recorder, film; scanner, motion-picture film; transfer function, opto-electronic.

Television, Enhanced (ETV) (Also EDTV):

"The term enhanced television designates a number of different improvements applicable to 525/60-Hz and 625/50-Hz television systems." They include all television systems not specified in CCIR Report 624-4. Characteristics of Television Systems. and Report 801-4, The Present State of High-Definition Television, "either with unchanged or new radiation standards" and without specification of aspect ratio [CCIR Report 1077, 1990]. cf. CCIR Rep 1077.

Television, High-Definition (HDTV):

"A high-definition television system is a system designed to allow viewing at about three times the picture height, such that the system is virtually, or nearly, transparent to the quality of portrayal that would have been perceived in the original scene or performance by a discerning viewer with normal visual acuity. Such factors include improved motion portrayal and improved perception of depth.... A high-definition television system generally implies in comparison with conventional television systems: (1) spatial resolution in the vertical and horizontal directions of about twice that available in CCIR Rec 601-2; (2) any worthwhile improvements in temporal resolution beyond that achievable with CCIR Rec 601-2; (3) improved color rendition; (4) a wider aspect ratio; (5) multichannel highfidelity sound" [CCIR Report 801-3, 1989]. cf. CCIR Rec 709-1; CC!R Rep 801-4; SMPTE 240M.

THD

See Total Harmonic Distortion

Threshold Of Hearing

The minimum sound pressure level of a pure tone that can be perceived by a person with good hearing. A sound pressure of 20x10-6 pascals is defined as 0dB SPL.

Threshold Of Pain

The minimum sound pressure level of a pure tone which causes a sensation of pain in the ear. (At approximately 140 dB SPL)

Throw distance

The length of the projection beam necessary for a particular projector to produce an image of a specified size.

THX

A trademark licensed to movie theatres and manufacturers of home theatre products, identifying compliance with the performance parameters of Lucasfilm Ltd. for commercial and home theatre

sound systems. Unlike Dolby's focus on soundtrack formats and processes, THX develops standards for the playback environment, regardless of film format. THX-certified theatres use professional Dolby cinema processors for playing Dolby soundtracks (which is why both logos can appear on the same theatre marquees), and all THX-licensed home theatre systems are based on Dolby Pro Logic Surround decoding.

Tight

A descriptive rather than technical term usually applied to a well defined sound notable for its clarity and distinction. "Tight" usually refers to the absence of excessive reverberation and out of phase reflections.

Timbre

The subjective tonal quality of a sound. The timbre of any musical or non-musical sound is determined largely by the harmonic structure of the sound wave. Rich sounding musical tones tend to have a great number of inner harmonics which contribute to their lush timbre, while thin sounding musical tones tend to be lacking in the presence of harmonics.

Tint

See Hue.

TP

Twisted Pair (of copper lines)

Treble

The upper range of audio frequencies, above approximately 4000 Hz.

TTL (Transistor to Transistor Logic)

Digital type signal, usually 4-5 volts peak to peak. Distance limitation is 6-10 feet. Signal splitting is acceptable. TTL signals are either "ON" or "OFF" and is characteristic of low resolution computers (CGA/EGA).

Tuner

A device in a receiver that will convert RF signals into TV images and sound.

A radio receiver without amplification.

Tuner Output Jack

Some monitor/TV receivers combos feature a jack on the rear allowing access to a composite NTSC video signal of what's received "off the air." In better sets you can use this output to record special features like picture-in-picture or multi-image.

Tweeter

A loudspeaker for reproducing treble frequencies.

Twisted Pair Cable

Two wires, usually loosely spun around each other to help cancel out any induced noise in balanced circuits.

U

UDTV
See Ultra Definition TV

UHF
Ultra High Frequency. Those frequencies for TV transmission commonly known as channels 14-83.

Ultra Definition TV
Digital system under development in Japan by many companies including Nippon Television Network Corp. and Fuji Television. 2000 lines.

U-Matic
Sony's trademark for all 3/4" format VCRs and players.

Universal TV/VCR/Cable Remote (TV)
Controls all features and functions of this television monitor/receiver with direct menu access. In addition, the remote controls all important operating features and functions of virtually all infrared VCRs, and on/off and channel up/down functions of most cable converter/decoders.

UPS
Uninterruptible Power Supply

USSB
United States Satellite Broadcasting See also DirecTv

V

Variable Audio Output

An adjustable audio output. When connected to the input of a VCR or other recording device, it provides a variable volume level to that device, dependent on volume variations at the source.

V-Chip

Discussion in the US to require incorporation of a V-Chip which would block the display of violent and/or pornographic material on a TV. Transmitters to incorporate a signal in the VBI.

VCR

Video Cassette Recorder which uses proprietary formats such as 1/2" VHS, SVHS, MII or 3/4" U-Matic SP. Any video recorder using a cassette.

VCR PLUS+

A VCR feature that allows you to set up a VCR for a Timer Recording simply by entering a PlusCode* number which can be found in the TV section of most newspapers, cable TV listings or TV Guide magazine. VCR PLUS+ and VCR PLUS+ are trademarks of Gemstar Development Corp.

VCR Plus+® Programming (VCR)

VCR Plus+® simplifies VCR programming by allowing you to simply enter the Plus Code® numbers found in most newspaper and TV listing sources published throughout the country. When VCR timer recording begins, your VCR automatically selects the proper channel and program length as determined by the Plus Code .

Vertical Scan Rate

Also called refresh rate or frame rate. The number of time in a second any given scan line is repeated or the number of times in a second the entire image is repeated. Decreasing the vertical rate causes flicker in the image, increasing it decreases flicker but increases the horizontal scan rate and the bandwidth requirements of the projector. In an interlace mode the field rate is twice the frame rate and each of two fields is composed of either all the even numbered scan lines or odd numbered scan lines. This reduces the horizontal scan rate without reducing resolution. In the interlace mode flicker in less than a non-interlaced signal unless the image included very fine horizontal lines.

VGA

IBM Standard for personal computer data displays since the introduction of the PS/2 personal computer systems in 1988. It actually includes 4 frequencies, although the most common is the 640x480 pixel display with 16 colors (H-Scan is 31.5 kHz @ 60 Hz vertical). It also includes an emulation of the original CGA standard (640x400 pixels, 256 colors, 31.5 kHz @ 70 Hz vertical) and an emulation of the intermediate EGA display (640x350 pixels, 256 colors, 31.5 kHz @ 70 Hz vertical). It also introduced the
1024 x 768 pixel display in a interlaced mode (256 colors, 35.5 kHz @ 43.5 vertical) which is still called the 8514a mode after the original IBM model number. Other manufacturers have since taken this standard and expanded on it with super-VGA modes with increased colors and resolution.

VHF

Very High Frequency. Those frequencies for TV transmission commonly known as channels 2-13.

VHS

Video Home System, developed by JVC, is the most popular video cassette format, using 1/2" tape. VHS-C is a compact version, developed for use in camcorders and which can be played back on standard VHS-format machines with an adaptor.

Video 8

Video cassette format, developed by Sony, that uses 8mm tape on a small cassette. Capable of playing hi-fi sound and both standard and long play

Video Bandwidth

A measurement of the electronic frequency response of a circuit, in this case a video circuit. Limited bandwidth reduces the detail in the image. This is especially noticeable on high resolution computer
graphics image sources.

Video Distribution Amplifier

A special amplifier for strengthening the video signal so that it can be supplied to a number of video monitors or other devices at the same time.

Video monitor

A display device that can receive video signals by direct connection only and cannot receive broadcast signals such as commercial television; it can be connected directly to the computer. Compare television set.

Video Out

Jack on the back of a video component that can be used to send pictures (video) to a TV. Can also be connected to a VCR (Video Cassette Recorder) to record pictures sent out from a video source.
Conditional Access system developed by News Datacom/Thomson.

Videotape

A magnetic medium capable of storing an electronic signal and consisting of backing, binder, and coating. The coating usually consists of iron oxide, however, metal particle or metal evaporated coatings are also used.

Visible Spectrum:

That part of the electromagnetic spectrum that the human eye can perceive, between the ultraviolet and the infrared (range = .4 microns to .76 microns).

VOD

Video On Demand

VTR

Video Tape Recorder. An electro-mechanical device capable of recording, storing, and reproducing an electronic signal which contains audio, video, and control information. The term VTR includes reel-to-reel and cassette type (VCR) recorders.

W

Watt
The unit of electrical or acoustical power.

Watts Per Channel (WPC)
Amount of power delivered by an amplifier to drive a speaker. A standardized measurement.

W-HDTV
See Wide Band HDTV

White Noise
Random noise having uniform distribution of energy with frequency.

Wide Band HDTV
System without bandwidth reduction techniques offering the viewer the same quality at home as available in the studio.

Widescreen
Widescreen picture, a new development in TV technology, provides an aspect ratio closer to that of a motion picture screen than that of conventional TV screens which have a 4x3 ratio (horizontal to vertical). Motion pictures are shot in a 16x9 aspect ratio which gives a panoramic broad picture. A few camcorders now have a 16x9 feature.

Wireless Cable System
See MMDS.

Woofer
A loudspeaker for reproducing bass frequencies.

Wow and Flutter
Audible periodic variations in the pitch of a sound from an audio system. The low-frequency variations (up to about 10 Hz) are wow, while the higher-frequency variations are flutter.

W-VHS
Recording system developed by JVC for Analog Recording of Hi-Vision (and future standards such as EDTV2. Compatible with VHS/S-VHS. The Hi-Vision signal (1032 lines effective) is split in two 525-line (516 eff) signals, which are recorded separately on adjacent tracks on a tape.

WWW (World Wide Web)
An international network of subscriber sites where selected information in the form of text and/or graphics is made available to computer users (Web Site visitors).

X

Xenon Arc Lamp

High intensity electric lamp that utilizes a glass envelope that contains xenon gas under pressure surrounding an electric arc between two electrodes. Xenon arc lamps are the brightest lamps used in the projection industry and are typically used for large theater motion picture projectors, follow spot lights and light valve video/data projectors.

XGA

eXtended Graphics Array card. IBM's graphics standard that includes VGA and extended resolutions up to 1024 x 768, interlaced; 35 kHz. This card has a 15-pin HD connector.

XLR

Industry standard connector for low Z (low impedence) balanced audio cable.

XLR connector

A connector with three conductors used in professional audio applications, typically with a balanced signal. Compare RCA connector and BNC connector.

Y Z

Y

Variable used for luminance in engineering. When you plot a waveform, the x axis is time and the Y axis is amplitude. Luminance varies with amplitude, and is always graphed on the y axis.

Y/C

COMPATIBLE Accepts signals from Super-VHS and Hi8 sources.

Z

A symbol for impedance.