Grass Valley Group Technical Dictionary

Numeric Entries

110 Analog Video Switcher

A compact, low-cost analog video switcher made by Grass Valley Group. Widely recognized as the industry standard for small switchers.

1000/1200 Digital Video Switchers

Compact yet full-featured component digital video switchers made by Grass Valley Group.

1080i

An abbreviated term for a high definition digital video signal as defined by SMPTE 274M. 1080i signals have 1920 pixels per horizontal line, 1080 active lines, and are interlace with two fields per frame.

20-TEN™

Grass Valley Group one rack-unit routing switcher with 20 inputs and 10 outputs.

200/250 Series Switchers

A series of multiple M/E production and post production analog and analog component video switchers made by Grass Valley Group. The standard by which other analog switchers are measured.

3.58MHz

The approximate frequency of the subcarrier used in NTSC video to carry the color information. The actual frequency is 3.579545 MHz ± 10 Hz.

3000 Digital Video Switcher

A powerful, multiple M/E composite digital video switcher made by GVG.

3800 Impedance Conversion Modules

A series of GVG video balun modules for converting between balanced and unbalanced 75 ohm or 124 ohm video cable.

4.43 MHz

The approximate frequency of the subcarrier used in PAL video to carry the color information. The actual frequency is 4.43361875 MHz ± 5 Hz.

409

Grass Valley Group editor program that automatically cleans the edit decision list to eliminate overlapping edits.

4000 Component Digital Switcher

A top-of-the-line multiple M/E component digital video switcher made by GVG.

4-field sequence

See *color field*.

4fsc

Four times the frequency of SC (subcarrier). The sampling rate of a D2 digital video signal with respect to the subcarrier frequency of an NTSC or PAL analog video signal. The 4fsc frequency is 14.3 MHz in NTSC and 17.7 MHz in PAL.

4:2:2

A commonly-used term for a component digital video format. The details of the format are specified in the ITU-R BT.601-2 standard document. The numerals 4:2:2 denote the ratio of the sampling frequencies of the single luminance channel to the two color difference channels. For every four luminance samples, there are two samples of each color difference channel. See *ITU-R BT.601-2*.

4:2:2:4

Same as 4:2:2 but with the addition of a key channel which is sampled four times for every four samples of the luminance channel.

4:4:4

Similar to 4:2:2 except that for every four luminance samples, the color channels are also sampled four times.

4:4:4:4

Similar to 4:2:2:4 except that for every four luminance samples, the color and key channels are also sampled four times.

7000 Signal Management System

A sophisticated serial digital video and AES/EBU digital audio routing switcher made by Grass Valley Group. Capable of controlling component and composite analog video/audio and serial component and composite digital video/audio within the same frame. Offers frame sizes from 16 x 16 to 128 x 128 with expansion up to 1024 x 1024.

720p

An abbreviated term for a high definition digital video signal as defined by SMPTE 296M. 720p signals have 1280 pixels per horizontal line, 720 active lines, and are progressive scan.

SMS 8000 Systemization Products

A series of compact digital-to-analog and analog-to-digital video converters made by Grass Valley Group.

8-field sequence

See *color field*.

8281

A commonly-used type of precision, double-shielded, 75-ohm video cable manufactured by Belden Wire & Cable Company.

8500/8800 Distribution Amplifiers

Modular video distribution products made by Grass Valley Group.

90W Wideband IM Fiber Optic System

A cost-effective fiber distribution system for wide bandwidth (HDTV) video.

MAX 900 Analog Systemization Products

A series of modular component analog video distribution, translation, Source selection, and timing/delay products made by Grass Valley Group.

MAX 9000 Digital Systemization Products

A series of modular digital video and AES/EBU audio products made by Grass Valley Group. Available modules include serializers, deserializers, line delays, multiplexers, demultiplexers, distribution amplifiers, and D/A and A/D converters.

9500 Series Sync Generators

A series of synchronizing generators made by Grass Valley Group.

A

A-B editing

See *A-B roll*.

A-B roll

Videotape editing arrangement in which scenes on tape are played alternately on VTRs A and B and recorded on VTR C. Typically, the final output recorded on VTR C contains some scenes from VTR A and some scenes from VTR B with transitions (cuts, mixes, wipes etc.) between the scenes.

absorption loss

In telecommunications, attenuation of the optical signal within the fiber optic transmission medium. Usually specified in terms of dB/km.

AC (ac)

Alternating current.

AC coupling

A method of coupling one circuit to another through a capacitor or transformer so as to transmit the varying (AC) characteristics of the signal while blocking the static (DC) characteristics. In some analog GVG distribution amplifiers, when the AC coupling mode is selected, a feedback loop maintains the output signal at an average DC level of 0 volts regardless of APL (average picture level) or DC offset of the incoming signal.

AC/DC coupling

May also be called simply DC coupling. Coupling between circuits which accommodates the passing of both AC and DC signals.

AC-3

A transport mechanism for multi-channel audio, as defined by ATSC specification A-52. AC-3 is used as one of the audio delivery system for DTV programs.

accumulation

See *key accumulation*.

accumulative latch

A feature of some GVG keyers that allows combining of several key sources in a single keyer.

active node controller (ANC)

An ANC is communicating with the MCPU and will appear in a list of Active Node Controllers when polled by the GUI. The *enhanced node controller (ENC)* and the Matrix Controller modules also appear in the list. ANCs include both the primary and backup Controller modules.

active picture period

That portion of the video signal that produces the viewable part of the television picture as distinguished from that portion of the video signal that occurs during blanking (horizontal and vertical retrace).

active video

The portion of a video signal that contains picture information.

active window

The window in a software application that is currently selected for use.

adaptive

Able to adjust or react to a video condition or application, as an adaptive circuit. This term usually refers to filter circuits.

ADC (A-D, A/D, A-to-D)

Analog-to-digital converter.

additive key

Method of keying in which two complementary video signals that have already been shaped by multiplication with a key signal are added to create a composite image.

additive mix

Addition of two video images together without attenuation of either signal.

address

1. A precise frame location on a videotape, usually identified by a time code number.

2. A memory location or device identifier in microprocessor and computer terminology.

address mask

A bit mask used to select bits from an Internet address for subnet addressing. The mask is 32 bits long and selects the network portion of the Internet address and one or more bits of the local portion. Sometimes called subnet mask.

AES

Audio Engineering Society. AES represents any of the digital audio standards established by the Audio Engineering Society.

AES/EBU

Informal name for a digital audio standard established jointly by the AES and EBU organizations. The sampling frequencies for this standard varies depending on the format being used; the sampling frequency for D1 and D2 audio tracks is 48 kHz.

AFV

Audio follow video.

AGC

Automatic gain control.

Ah

Ampere-hour.

air

To broadcast a signal.

alarm

A signal indicating major or minor alarm conditions.

alarm indication signal (AIS)

In telecommunications, an all 1's signal (generally) generated by in-line equipment to indicate to down line devices that an input has failed. See also *blue signal*.

album

A storage place within a video editing application for cataloguing and archiving clips, effects, and other production elements.

aliasing

Defects or distortion in a television picture. In analog video, aliasing is typically caused by interference between two frequencies such as the luminance and chrominance frequencies or the chrominance and field scanning frequencies. It appears as moire or herringbone patterns, straight lines that become wavy, or rainbow colors (See *cross chrominance (cross color)*). In digital video, aliasing is caused by insufficient sampling or poor filtering of the digital video. Defects are typically seen as jagged edges on diagonal lines and twinkling or brightening in picture detail.

alien matrices

Any matrix which is not a part of the Series 7000 router product line.

alignment

The adjustment of components in a system for optimum performance.

all inputs hostile

Measurement technique, particularly for crosstalk, using worst case conditions (typically, full chroma signal on all inputs other than the one under test).

all-Level Takes

Switch the same input number on all Levels, to the controlled Destination.

all ones

A digital signal consisting of data that contains all logical ones. In telecommunications, a test signal consisting of 11111.

alphanumeric

A display symbol set consisting of the twenty-six letters of the alphabet and the digits 0 through 9.

alternate mark inversion (AMI)

In telecommunications, an encoding protocol where successive data 1's are transmitted as alternate, equal positive and negative pulses, and data 0's are sent as spaces, each of zero amplitude.

a.m.

Ante meridiem; before noon.

AM

1. Amplitude modulation.

2. A broadcasting system using this method of signal transmission.

ambient temperature

The temperature of the surrounding medium, typically the air, which comes into contact with a device. Room temperature.

Amezi

Asynchronous mezzanine board. An RS-422/RS-232 communications board which mounts on the 7000 MCPU or a 7000 Communications Interface (CIF) module and provides RS-422 and RS-232 ports. The asynchronous mezzanine board is one of several mezzanine boards of differing functionality.

A-mode assembly

See *sequential assembly*.

amp (A)

Ampere.

ampere (A)

Unit of measure of electrical current.

Amphenol

A connector manufacturer.

amplitude

The magnitude of a signal in voltage or current. Frequently expressed in terms of peak, peak-to-peak, or RMS.

amplitude modulation (AM)

A method of imposing information on a carrier signal, such as a sine wave, by varying its amplitude.

analog

1. An adjective describing any signal that varies continuously as opposed to a digital signal, which contains discrete levels.

2. A continuously variable signal that conveys information. Conventional Definition Television (NTSC, PAL, etc.) is analog.

3. A system or device which operates primarily on analog signals.

analog component

Another name for component video, such as RGB or Y, R-Y, B-Y, as opposed to digital component video. See *component video*.

analog component island

A discrete set of analog component equipment within a non-component facility.

analog-to-digital converter

A circuit that uses digital sampling to convert an analog signal into a digital representation of that signal.

ANC

See *active node controller (ANC)*.

ANSI

American National Standards Institute.

anti-aliasing

A feature of some video devices, such as character generators, which minimizes aliasing by filtering and other techniques. See *aliasing*.

AOS

Alternate Operator Service.

aperture correction

The enhancement of a video signal to increase image sharpness. Aperture correction is employed to compensate for the finite size of a scanning beam or a pixel.

APD

Avalanche photodiode.

APL (average picture level)

The average level of the active video (portion of video between blanking pulses), expressed as a percentage or in IRE.

append mode

In video devices capable of creating key frame effects, a mode that permits new key frames to be added to an existing key frame effect to make the effect longer.

application

A software package that runs on a computer system.

application window

The main or home window displayed by a software application from which other subordinate windows are accessed.

architecture

1. Internal organizational (circuit) structure of an electronic product.

2. Physical layout and interconnection scheme of a studio.

archive

Off-line storage of video/audio onto backup tapes, floppy disks, optical disks, etc.

artifacts

Undesirable elements or defects in a video picture. These may occur naturally in the video process and must be eliminated in order to achieve a high-quality picture. Most common are cross color and cross luminance.

ASCII

American Standard Code for Information Interchange. A standard code for transmitting data, consisting of 128 letters, numerals, symbols, and special codes each of which is represented by a unique binary number.

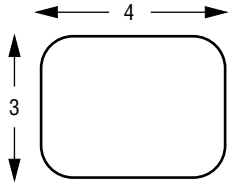
ASIC

Application Specific Integrated Circuit. An integrated circuit designed for special rather than general applications.

aspect ratio

1. The ratio of television picture width to height. In NTSC and PAL video, the present standard is 4:3.

2. The ratio of a picture's horizontal and vertical dimensions when correctly displayed (16:9 for example).



3. The ratio of wipe pattern width to height.

assembly

1. A manufactured part made by combining several other parts or subassemblies. For example, a cable assembly consists of the cable with connectors at each end.

2. Assembly language.

assemble edit (assemble mode)

An editing mode that replaces all signals on the record tape (video, audio, control, and time code tracks) with new signals. See also *insert edit (insert mode)*.

assembly language

A symbolic computer language in which a programmer can create programs that the computer's assembler program will translate into machine language for controlling the computer. Assembly language is a higher level language one step above machine language.

assignment

Assignment is an action that grants permission for exclusive control of a resource. Multiple devices may be assigned permission for exclusive control of a single device, however only one may exercise control at a specific point in time.

Control of particular sources and TieLines can be Assigned to Destinations on a case-by-case basis. The Assignment system is enabled (Machine and TieLine Assignment) through the GUI Enables menu. Active Assignments are controlled through the GUI (on-line, OnLine menu, Assignments submenu) or may be handled by an external automation or scheduling system.

asynchronous

Lacking synchronization. In video, a signal is asynchronous when its timing differs from that of the system reference signal. A foreign video signal is asynchronous before it is treated by a local frame synchronizer.

ATM

Asynchronous Transfer Mode. A data transmission scheme using self-routing packets of 53 bytes, 48 of which are available for user data.

atomic frequency standard

In television, an extremely accurate means of timing using an atomic clock.

ATR

Audio tape recorder.

ATSC

Advanced Television Systems Committee (USA). A group whose charter is to develop voluntary national standards for high definition television.

attached

A physical channel of a digital picture manipulator is attached to a logical channel of a controller if the physical channel is successfully acquired by the controller. A physical channel may be attached to only one logical channel of one controller at a time.

attenuation

The decrease in amplitude of a signal.

attenuator

A circuit that reduces signal amplitude.

ATSC

Advanced Television Systems Committee, developer of the HDTV standards recommended to the FCC for adoption.

ATV

Advanced television. High resolution digital television, several versions of which are in proposal stages in the US and Europe.

audio

Sound. An electrical signal that carries sound information.

audio bridge

In telecommunications, a device that mixes multiple audio inputs and feeds back composite audio to each station, minus that station's input. Also known as a mix-minus audio system.

audio crosspoint module

Circuit board containing crosspoints for audio signal switching.

audio distribution amplifier (audio DA)

A device used to replicate an audio signal, typically providing 6 outputs, each of which is identical to the input signal.

audio-follow-video (AFV)

An operational mode in which audio and video switchers are tied together so that when the operator selects the video Source, the audio simultaneously and automatically switches to the same Source.

audio over

See *over*.

auto assembly

In video editing, the editing system automatically records all edits listed in the edit decision list. This allows the operator to complete an edit decision list and then let the editing system perform all of the recording automatically.

auto clean

A feature of GVG editors that automatically cleans the edit decision list during the course of editing. This removes duplicate or overlapping edits so that over-recordings are eliminated. See *409*.

AUTO MATCH™

A feature of GVG editors that automatically finds a match to the last record VTR edit and inserts the match at the proper VTR in the mark table.

automatic changeover switch

Equipment that monitors the outputs of two sync generators (one in-use and one backup) and automatically switches to the backup sync generator should there be a failure of the sync generator in use.

auto select key

A feature of some video keyers that automatically selects the key source when the operator selects the key fill.

auto setup

A feature of some GVG chroma keyers that automatically adjusts the chroma key after the operator identifies the chroma key background color using a cursor.

autotiming

Capability of some digital video equipment to automatically adjust input video timing to match a reference video input. Eliminates the need for manual timing adjustments.

auto transition

1. On a video switcher, an automatic transition where the motion of the lever arm is electronically simulated.

2. A transition effect (generally initiated by a button press) where the motion of the panel's lever arm is electronically simulated. Auto transition durations are typically specified in frames.

autotrim

In some GVG editing systems, autotrim allows two adjacent video clips to be trimmed at the same time. The in point of one clip is trimmed at the same time that the out point of the adjacent clip is trimmed.

auxiliary bus

A single crosspoint bus, typically used in conjunction with a production switcher. Often used to feed a digital picture manipulator with the same inputs as the primary inputs applied to the switcher.

auxiliary channel (aux)

In a video editing system, a channel reserved for connecting an external audio and/or video device.

avalanche photodiode

Electronic device used as a detector in some fiber optic transmission systems.

AWG

American Wire Gauge.

axis

Relating to digital picture manipulation, the X axis is a horizontal line across the center of the screen, the Y axis is a vertical line, and the Z axis is in the third dimension, perpendicular to the X and Y axes and indicates depth and distance.

B

B3ZS (bipolar with three zero substitution)

In telecommunications, a DS3 coding method in which strings of three data 0's are replaced with either a B0V or 00V. B is a bipolar pulse, and V is a pulse of the same polarity as the previous pulse. B0V or 00V is output so that the number of B pulses between consecutive V pulses is odd.

B6ZS (bipolar with six zero substitution)

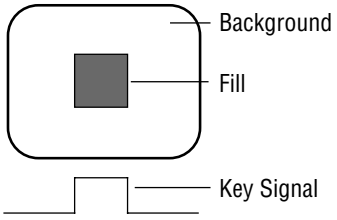
In telecommunications, a DS2 coding method in which strings of six data 0's are replaced with 0VB0VB. B is a bipolar pulse, and V is a pulse of the same polarity as the previous pulse.

B8ZS (Eight zero substitution)

In telecommunications, a DS1 coding method in which strings of eight data zeros are replaced with the following: 000VB0VB. B is a bipolar pulse, and V is a pulse of the same polarity as the previous pulse.

background (program video)

In video keying operations, the main "program" picture into which keyed video is inserted. Usually the image with the lowest priority in an effect; i.e., the bottom layer.



background color cancellation (BCC)

A chroma key feature which senses the color of the chroma key backing and replaces it in the chroma key scene with a complementary color. As a result, the two colors cancel each other. This helps to eliminate the undesirable halo or fringing effect surrounding the foreground object in the chroma key.

background color suppression (BCS)

A chroma key feature which senses the color of the chroma key backing and replaces it with an adjustable luminance level. This helps prevent any of the backing color from showing in the chroma key.

background generator

A video generator that produces a solid-color output which can be adjusted for hue, chroma, and luminance.

background mix

A dissolve between two background (program) video pictures in which one gradually replaces the other.

background transition

A transition between signals selected on the preset background and program background buses of a switcher.

background video

1. Video that forms a background scene into which a key may be inserted.

2. A solid-color video output generated by the background generator within a device, such as a production switcher, for use as background video in key effects.

background wash

A color matte effect in which the matte color graduates from dark to light or from one color to another.

background wipe

A transition in which a background (program) video picture is added, removed, or replaced with another video picture as a geometric pattern moves across the screen.

backplane (rear connector channel, motherboard)

The physical area, usually at the rear of an electronics frame, where modules and cables plug into the system.

back porch

The portion of a video signal that occurs during blanking from the end of horizontal sync to the beginning of active video. The blanking signal portion which lies between the trailing edge of a horizontal sync pulse and the trailing edge of the corresponding blanking pulse. Color burst is located on the back porch.

backspacing

The process of rewinding a videotape from the desired edit-in point, to facilitate proper speed and synchronization.

backtiming

Method of calculating the edit-in point by subtracting the duration of the edit from the edit-out point.

backup supply

A redundant power supply that takes over if the primary power supply fails.

balanced

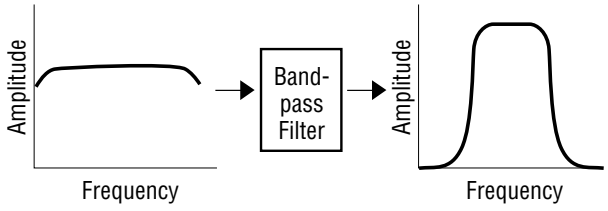
A circuit having two sides (conductors) carrying voltages which are symmetrical around a common reference point, typically ground.

ballistics

Describes the dynamic characteristics of a meter movement-most notably, response time, damping, and overshoot. Also used to describe the physical characteristics of tape machines (inertial, ringing, damping, etc.).

bandpass filter

A filter with a single transmission band that attenuates the frequencies on either side of the band.



bandwidth

The complete range of frequencies over which a circuit or electronic system can function with minimal signal loss, typically less than 3 dB. The information carrying capability of a particular television channel. In PAL systems the bandwidth limits the maximum visible frequency to 5.5 MHz, in NTSC, 4.2 MHz. The CCIR 601 luminance channel sampling frequency of 13.5 MHz was chosen to permit faithful digital representation of the PAL and NTSC luminance bandwidths without aliasing.

bank

1. A group of E-MEM Effects Memory registers, typically ten registers.

2. A mix/effects level in a video switcher, i.e., M/E bank.

bars

See *color bars*.

baseband

The frequency band occupied by a signal that modulates a carrier before it combines with the carrier in the modulation process.

baseline shift

A form of low-frequency distortion resulting in a shift in the DC level of the signal.

baud

A unit of signaling speed equal to the number of signal events per second. Baud is equivalent to bits per second in cases where each signal event represents exactly one bit. Often the term baud rate is used informally to mean baud, referring to the specified maximum rate of data transmission along an interconnection. Typically, the baud settings of two devices must match if the devices are to communicate with one another.

BCC

Background color cancellation.

BCD

Binary coded decimal. A coding system in which each decimal digit from 0 to 9 is represented by four binary (0 or 1) digits.

BCS

Background color suppression.

bearding

Video distortion that appears as short black lines extending to the right of bright objects within a scene.

beeper

A device that makes a clicking or chirping sound to alert the user that a control knob has reached a limit.

bel

A measure of voltage, current, or power gain. One bel is defined as a tenfold increase in power. If an amplifier increases a signal's power by 10 times, its power gain is 1 bel or 10 decibels (dB). If power is increased by 100 times, the power gain is 2 bels or 20 decibels.

Belden

A cable manufacturer.

bends

A group of digital picture manipulator special effects in which the video image is twisted about an axis.

BER

Bit error rate.

Beta

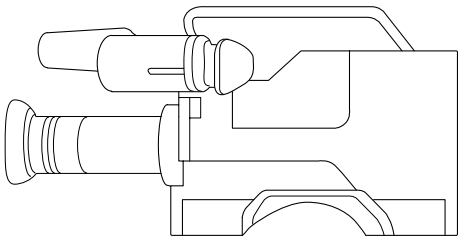
Informal name for Betacam, a professional color difference videotape recording format that uses the Y, R-Y, and B-Y color difference components. Also the name of a consumer videotape recording format that is completely different from the professional Betacam format.

Betacam

Portable camera/recorder system using 1/2-inch tape originally developed by Sony. The name may also refer just to the recorder or the interconnect format; Betacam uses a version of the Y, R-Y, B-Y color difference signal set. Betacam is a registered trademark of the Sony Corporation.

Betacam SP

A superior performance version of Betacam. SP uses metal particle tape and a wider bandwidth recording system. BETR



bias

1. In digital picture manipulators, a characteristic of location/positioning which controls the direction of the motion path as it passes through a key frame position.

2. Current or voltage applied to a circuit to set a reference operating level for proper circuit performance, such as the high frequency bias current applied to an audio recording head to improve linear performance and thus reduce distortion.

binary

A base-2 numbering system using the two digits 0 and 1 (as opposed to ten digits (0 - 9) in the decimal system). In computer systems, the binary digits are represented by two different voltages or currents, one corresponding to 0 and another corresponding to 1. All computer programs are executed in binary form.

bipolar

A signal that contains both positive-going and negative-going amplitude. May also contain a zero amplitude state.

bipolar violation (BPV)

In telecommunications, a data 1 pulse that is the same polarity as the last data 1 pulse. Indicates a data error or zero substitution.

bird

A satellite.

BISDN

Broadband Integrated Services Digital Network.

bit

Binary digit. The smallest unit of data in a digital system. A bit is a single one or zero. A group of bits, such as 8 bits or 16-bits, compose a byte. The number of bits in a byte depends upon the processing system being used. Typical byte sizes are 8, 16, and 32.

bit parallel

Transmission of digital video a byte at a time down a multi-conductor cable where each pair of wires carries a single bit. This standard is covered under SMPTE125M, EBU 3267-E and ITU-R BT.656 (CCIR 656).

bit rate

The number of bits per second passed from one point to another.

bit serial

Transmission of digital video a bit at a time down a single conductor such as coaxial cable. May also be sent through fiber optics. This standard is covered under ITU-R BT.656 (CCIR 656).

bit slippage

1. Occurs when word framing is lost in a serial signal so that the relative value of a bit is incorrect. This is generally reset at the next serial signal, TRS-ID for composite and EAV/SAV for component.

2. The erroneous reading of a serial bit stream when the recovered clock phase drifts enough to miss a bit.

3. A phenomenon that occurs in parallel digital data buses when one or more bits get out of time in relation to the rest. The result is erroneous data. Differing cable lengths is the most common cause.

bit stream

A continuous series of bits transmitted on a line.

BKGD

Background.

black

A black video signal generated within the switcher. Also see *color black* and *stripe*.

black burst

See *color black*.

black level

The lowest transmittable luminance level that can occur during the active picture portion of a video signal. When viewed on a monitor this signal level portrays the color black.

black reference

See *black level*.

blanking insertion

See *blanking processor*.

blanking level

The voltage level equal to or below the black level that acts as a signal to turn off the scanning beam of a camera or monitor.

blanking processor

A circuit which strips blanking, sync, and sometimes burst from a signal and replaces them with clean blanking, sync, and burst from a reference source. This process ensures that blanking, sync, and burst do not contain any unwanted noise, level changes, or timing shifts.

blanking width

The specific length of time during which blanking takes place.

blanking (BLKG)

1. The time period when picture information is shut off. Blanking is a voltage level which is at or below black picture level and acts as a signal to turn off the scanning beam. Synchronizing pulses which control invisible retrace of scanning are active during the blanking period.

2. A standard signal from a sync generator used to create blanking in video.

bleed-through

See *crosstalk*.

BLKG

Blanking.

blocking

Occurs in a multistage routing system when a Destination requests a Source and finds that Source unavailable. In a TieLine system, this means that a DestinationLevel requests a TieLine and receives a "TieLine busy" message, indicating that all TieLines are in use.

blooming

1. The defocusing of regions of the picture where brightness is excessive.

2. On video monitors, adjusting the white levels so that they are just at the point of leaving grey and becoming white.

blue

One of the three primary color signals (red, green, and blue) produced by a camera or applied to a monitor.

blue signal

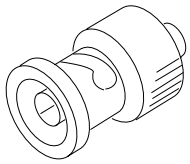
In telecommunications, an alarm signal composed of 1's and 0's (101010, etc.) substituted for lost valid input signal to indicate loss of the signal to downstream equipment.

B-mode assembly

A GVG editor term. See *checkerboard assembly*.

BNC

Bayonet Neill-Concelman. A cable connector used extensively in television and named for its inventor.



board

1. A printed circuit consisting of a flat board of insulating material with conductive circuits etched on its surface.

2. In GVG terminology, a board (as opposed to a module) is a printed circuit before it has been stuffed with electrical components. The term board is also used for fully-stuffed printed circuit boards that bolt into place in an assembly, whereas the term module refers to printed circuit assemblies that slide into position in a cell.

BOC

Bell Operating Company.

boot up

To start up. Most computers contain a system operating program that they read out of memory and operate from after power up or restart. The process of reading and running that program is called boot up.

border

An effect where a color or monochrome edge is produced around a key or a wipe pattern.

Borderline®

A key enhancement option that produces a black, white, or colored border or drop shadow around the key or changes the key into a matte-filled outline.

bounce

Overshoot of the proper DC level of the video signal due to multiple AC couplings in a signal path. Causes sudden brightness in the picture.

bounce free

Characteristic of circuit or equipment where overshoot of blanking DC levels does not occur.

box mask

A rectangular key mask which is adjustable for width and height. See also *mask*.

boundary replicate

A digital picture manipulation effect which reverses the soft, dark key edges caused by the defocus effect.

BPI

Backplane Interface. This is required for a Communications Interface module to communicate with a MCPU module.

BPS

Button Per Source. Name given to a panel feature that performs a Source Take with the single push of a button.

branching

A TieLine type is branching if more than one Begin Level is tied to one End Level, or vice versa.

Breakaway (Take)

A Take operation in which the audio and video signals do not automatically follow one another; audio and video are switched in separate operations.

breakup

Disturbance in the video or audio signal, often caused by loss of sync or videotape damage.

breezeway

In an analog video signal, that portion of the "back porch" between the trailing edge of the sync pulse and the start of the color burst.

bridge

1. A circuit that matches other circuits to each other.

2. To place one circuit in parallel with another.

brightness

In NTSC and PAL video signals, the brightness information at any particular instant in a picture is conveyed by the corresponding instantaneous DC level of active video. Brightness control is an adjustment of setup (also called black level or black reference).

broadband

1. A response that is the same over a wide range of frequencies.

2. Capable of handling frequencies greater than those required for high-grade voice communications (higher than 3 to 4 kilohertz).

Bruch blanking sequence

A PAL blanking sequence named after its inventor. The sequence ensures that each field starts with the same burst phase as the burst at the end of the previous field.

BSA

Basic Serving Arrangement.

BSE

Basic Service Element.

BSY

Busy. This is commonly found on the modules to identify the yellow busy LED.

buffer

1. A circuit or component which isolates one electrical circuit from another.

2. A digital storage device used to compensate for a difference in the rate of flow of information or the time of occurrence of events when transmitting information from one device to another.

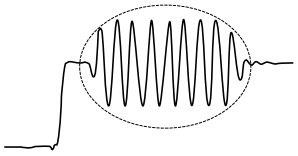
3. In telecommunications, a protective material used in cabling optical fiber to cover and protect the fiber. The buffer material has no optical function.

bumpers

A post production term relating to a group of effects used for video program lead-ins.

burst (color burst)

Seven to nine cycles (NTSC) or ten cycles (PAL) of subcarrier, placed near the end of horizontal blanking to serve as the phase (color) reference for the modulated color subcarrier. Burst serves as the reference for establishing the picture color.



burst flag (BF)

A pulse used to gate the color reference subcarrier (burst) onto the back porch of each horizontal blanking interval. Also called burst gate (BG).

burst gate (BG)

See *burst flag (BF)*.

burst of subcarrier

See *burst (color burst)* or *color burst (burst)*

burst vector

In composite video signals, the amplitude and angle of the color reference signal.

bus

A group of conductors that together constitute a major signal path. A signal path to which a number of inputs may be connected to feed to one or more outputs.

bus address

A code number sent out to activate a particular device on a shared communications bus.

button per Source

A control panel which has a separate button for each Source. Also called button per function.

BVB (black-video-black)

An editing mode in which an edit is previewed starting with a black picture, followed by a preview of the edit, and ending in black.

B-Y

One of the color signals (blue minus luminance) of a color difference video signal set. The formula for deriving B-Y from the red, green, and blue component video signals is –.30R –.59G –.89B. See *Y, R-Y, B-Y*.

bypass relay

A relay used to bypass the normal electrical route in the event of power, signal, or equipment failure.

bypass switcher

An audio-follow-video switcher usually associated with a master control switcher. Used to bypass the master control switcher output during emergencies, failures, or off-line maintenance.

byte

A group of data bits which are processed together. Typically, a byte consists of 8, 16, or 32 bits.

C

C

Celsius. Also chrominance.

Cable equalization

The process of altering the frequency response of a video amplifier to compensate for high-frequency losses in coaxial cable.

cable loss

Signal loss caused by passing the signal through a coaxial cable. Losses are the result of resistance, capacitance, and inductance in the cable.

cabling

Connecting wiring to equipment.

CABSC

Canadian Advanced Broadcast Systems Committee. A committee formed to coordinate new standards for high definition television.

CAM

Camera. A television camera.

camera

A generic term meaning the video camera head, containing the lens and pickup tubes, used to focus on and scan a scene. Also refers to completely self-contained cameras in which the entire camera chain is present in one unit.

camera chain

All of the parts of a multi-part camera, including the head, control unit, power supply, etc.

camera control unit (CCU)

A separate electronics frame that supplies power and control to a camera head. The CCU also provides encoding and/or processing of the video signal. Operator controls available at the CCU usually include video levels, color balancing, and iris control.

camera head

The portion of a video camera containing the lens and pickup tubes which focus on and scan a scene.

capacitance

The capability to store an electrical charge over a period of time.

capacitor

A device that stores electrical energy. It allows the apparent flow of alternating current while blocking the flow of direct current. The degree to which it allows AC current flow depends on the frequency of the signal and the size of the capacitor. Capacitors are used in filters, delay-line components, couplers, frequency selectors, timing elements, voltage transient suppression, etc.

caption

Text or titles to be inserted in video.

caption camera

A camera dedicated to imaging text or titles.

carrier wave

A single-frequency wave which, when transmitted, is modulated by another wave containing information.

cart, cartridge

A device that uses audiotape cartridges for recording or playing back audio. A plastic housing containing a loop of audio tape.

cascaded

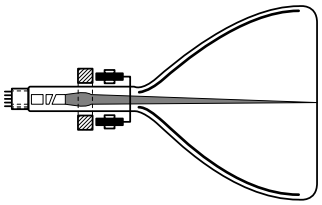
Arrangement of two or more circuits in which the output of one circuit provides the input of the next.

cassette

A self-contained plastic housing holding video or audio tape.

cathode ray tube (CRT)

Picture tube. A tube, usually glass, which is narrow at one end and widens at the other to create a surface onto which pictures can be projected. The narrow end contains circuits to generate and focus an electron beam on the luminescent screen at the other end. Used to display pictures in TV receivers, video monitors, oscilloscopes, computers, etc.



CAV (component analog video)

A video format in which three separate video signals represent luminance and color information. Each signal consists of an analog voltage that varies with picture content. Also called analog component.

CCD

Charge coupled device. A device that stores samples of analog signals. Used in cameras and telecines as an optical scanning mechanism. Advantages include good sensitivity in low light and absence of burn-in and phosphor lag found in CRTs.

CCIR

International Radio Consultative Committee, an international standards committee no longer in operation and replaced by the International Telecommunications Union (ITU).

CCIR-601

See *ITU-R BT.601-2*.

CCIR-656

See *ITU-R BT.656*.

CCITT

Consultative Committee on International Telegraph and Telephone

CCU

Camera control unit.

centimeter (cm)

One hundredth of a meter (0.01 meter). There are 2.54 cm per inch.

central processing unit (CPU)

The primary data processing section of a computer.

CEPT

Conference of European Posts and Telecommunications Administrations.

CG

Character generator.

CH

Channel.

changeover

See *automatic changeover switch*.

channel

1. A digital effects processing path for video.

2. A particular signal path.

3. A portion of the television broadcast spectrum assigned to a particular broadcasting station.

channel coding

Describes the way in which the 1s and 0s of the data stream are represented on the transmission path.

character generator (CG)

A computer used to generate text and sometimes graphics for video titles.

chassis ground

A connection to the metal frame that holds the electrical components in the system. This connection serves as the ground return or electrical common for the system.

checkerboard assembly

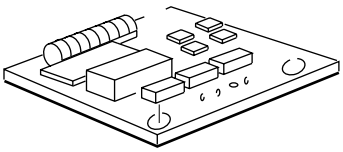
In video editing, a nonsequential method of auto assembly. The computerized editing system records all edits from the videotape playback reels currently in use, leaving gaps that will be filled later by subsequent reels. Also called B-mode assembly. See *auto assembly*.

child window

A subordinate window within a software application.

chip

Informal term for integrated circuit.



Chop

A variation of a Take command that alternately connects each of two different Sources to a single Destination (*flip-flopping*) at a designated switching rate (the ChopDestination rate).

chroma

Chrominance. The depth or saturation of color.

chroma crawl

An artifact of encoded video also known as dot crawl or cross luminance. Occurs in the video picture around the edges of highly saturated colors as a continuous series of crawling dots and is a result of color information being confused as luminance information by the decoder circuits.

chroma gain (chroma, color, saturation)

In video, the gain of an amplifier as it pertains to the intensity of colors in the active picture.

chroma key (color key)

A video key effect in which one video signal (insert video) is inserted in place of areas of a particular color in another video signal. Blue and green are the colors most frequently used. For example, a weatherman stands in front of a blue wall with a camera focused on him. The camera signal feeds a chroma keyer which detects the blue in the blue wall and replaces it with video from another camera, such as video of a weather map. Thus, the finished key makes the weatherman appear to be standing in front of the weather map.

chroma key aperture

The range of colors accepted by a chroma keyer for use in creating a chroma key. The narrower the aperture, the more color selective the chroma key will be.

chromatic dispersion

See *material dispersion*.

chromaticity

The color aspect of light including hue and saturation, but not intensity. The color perceived is determined by the relative proportions of the three primary colors.

Chromatte™

The chroma keying system used in some GVG digital video switchers.

chrominance

That portion of the video signal which contains the color information (hue and saturation). Video picture information contains two components: luminance (brightness and contrast) and chrominance (hue and saturation).

chrominance/luminance inequality

A video specification that compares delay and gain differences between chrominance and luminance.

chrominance nonlinear gain

An undesirable change in chrominance gain caused by a change in chrominance amplitude. Appears in a TV picture as incorrect color saturation.

chrominance nonlinear phase

An undesirable change in chrominance phase caused by a change in chrominance amplitude. Appears in a TV picture as a shift in hue as the color saturation level increases.

chrominance-to-luminance intermodulation (crosstalk, cross-modulation)

An undesirable change in luminance amplitude caused by superimposition of some chrominance information on the luminance signal. Appears in a TV picture as unwarranted brightness variations caused by changes in color saturation.

CIE colors (Commission Internationale de l'Eclairage)

Colors specified by the International Commission on Illumination which sets standards for illumination including color.

CIF

See *Communications Interface (CIF)*.

circuit

The interconnection of a number of devices to perform an electronic function.

cladding

The material that encases the core of an optical fiber. May be either glass or plastic. Because the cladding has a lower index of refraction than the core, incident light is confined inside the core and transmitted.

clamp, clamping

The circuit or process that restores the DC component of a signal. A video clamp circuit, usually triggered by horizontal synchronizing pulses, re-establishes a fixed dc reference level for the video signal. Some clamp circuits clamp sync tip to a fixed level, and others clamp back porch (blanking) to a fixed level. A major benefit of a clamp is the removal of low-frequency interference, especially power line hum.

clean edges

Optimum chroma and luminance transitions that define where one object ends and another begins.

clean edits

Edit transitions that are synchronized accurately in phase and in color frame.

clean feed

1. An output of a switcher consisting of Program video without any down- stream key.

2. A final output of the switcher that does not include downstream key effects or fade to black.

clear channel capability (CCC)

In telecommunications, DS1 data channels equipped to carry data containing all 0's. Normally done using B8ZS.

clip

1. In keying, the trigger point or range of a key source signal at which the key or insert takes place.

2. The control which sets this action. To produce a key signal from a video signal, a clip control on the keyer control panel is used to set a threshold level to which the video signal is compared.

3. In digital picture manipulators, a menu selection that blanks portions of a manipulated image that leave one side of the screen and "wrap" around to enter the other side of the screen.

4. In desktop editing, a pointer to a piece of digitized video or audio that serves as source material for editing.

5. In switchers, a threshold level adjustment to which the key Source attribute (luminance, chrominance) is compared for generating the internal key signal. The clip control sets the switching point between the background and the fill.

clipping level

An electronic limit to avoid overdriving the audio or video portion of the television signal.

CLN

Client Control Panel. A companion panel used with the Server panel to expand Source and Destination selection. Each Client controls three Destinations.

clock frequency

The master frequency of periodic pulses that are used to synchronize the operation of equipment.

clock jitter

Undesirable random changes in clock phase.

clock phase deviation

See *clock skew*.

clock recovery

The reconstruction of timing information from digital data.

clock skew

A fixed deviation from proper clock phase that commonly appears in D1 digital video equipment. GVG digital distribution amplifiers handle improperly phased clocks by reclocking the output to fall within D1 specifications.

clock wipe

A wipe that uses a circular pattern like the hand of a clock.

clone

In GVG editors, to create a new edit file which has parameters copied from an existing edit file.

CMOS (complementary metal-oxide semiconductor)

A semiconductor device consisting of two complementary MOS Field Effect Transistors: a p-channel transistor and an n-channel transistor.

CMR

Common mode rejection.

CMRR

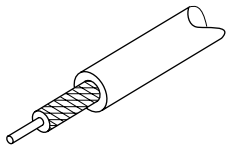
Common mode rejection ratio.

CO

Central office.

coaxial cable (coax)

A cable which has a metallic noise shield surrounding a signal-carrying conductor. In television, the cable impedance is 75 ohms.



codec

Coder-decoder. A device that converts analog video and audio signals into a digital format for transmission over telecommunications facilities and also converts received digital signals back into analog format.

coding

Representing each video signal level as a number, usually in binary form.

coefficient

A number (often a constant) that expresses some property of a physical system in a quantitative way.

cold start

To start up a system by turning power on.

color background

A full-field solid color used as a background in a video picture.

color background generator

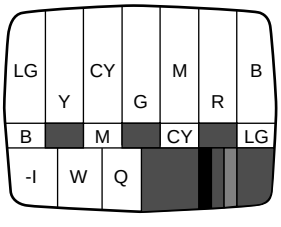
Circuit that generates a full-field solid color for use as a background in a video picture.

color balance

Adjustment of the intensity of each primary color to achieve the best possible representation of the entire color spectrum. White is used as a reference for setting color balance.

color bars

A video test signal widely used for system and monitor setup. Contains bands of color with fixed amplitudes and saturations.



color black

A composite video signal that produces a black screen when viewed on a television monitor. Composite video is a video signal that contains horizontal, vertical, and color synchronizing information.

color black locking

Synchronizing a piece of equipment to a color black video input.

color burst (burst)

Seven to nine cycles (NTSC) or ten cycles (PAL) of subcarrier placed near the end of horizontal blanking to serve as the phase reference for the color signal. Color burst is the reference for establishing the picture color (hue).

color correction

Correction of a video signal for level, hue, and luminance shifts. Performed by a device called a color corrector. Often used in film-to-tape transfer process to accommodate variations in color from different film batches.

color crawl

See *chroma crawl*.

color difference format

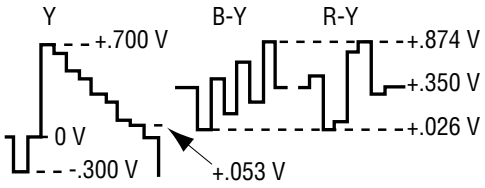
A video signal set that includes color difference signals. Betacam and MII, for example, are names of two widely-used color difference formats.

color difference signal

A video color signal made by subtracting luminance and/or color information from one of the primary color signals (red, green, or blue). In the Betacam color difference format, for example, the luminance (Y) and color difference components (R-Y and B-Y) are derived as follows:

Y = 0.3Red + .59Green + .11Blue
R-Y = 0.7Red - 0.59Green - 0.11Blue
B-Y = 0.89Blue - 0.59 Green -0.3Red

The G-Y color difference signal is not created because it can be reconstructed from the other three signals. Other color difference conventions include SMPTE, EBU-N10, and MII. Note that strictly speaking, color difference signals should not be referred to as component video signals. That term is reserved for the RGB color components. Nevertheless, in informal usage, the term component video is often used to mean color difference signals.



color field

In the NTSC system, the color subcarrier is phase-locked to the line sync so that on each consecutive line, subcarrier phase is changed 180° with respect to the sync pulses. In the PAL system, color subcarrier phase moves 90° every frame. In NTSC this creates four different field types; in PAL there are eight. In order to make clean edits, alignment of color field sequences from different sources is crucial.

color field sequence

The sequence of color fields that make one complete color frame.

color frame

In color television four (NTSC) or eight (PAL) properly sequenced color fields compose one color frame.

color frame ID (identification)

An identification pulse that indicates the beginning of a complete color frame.

color ramp

A background color that graduates from light to dark or from one color to another. See also *background wash*.

color timing

The synchronization of the burst phase of two or more video signals. Ensures that no color shifts occur in the picture when the signals are mixed in a switcher or other video device.

comb filter

An electrical filter circuit that passes a series of frequencies and rejects the frequencies in between, producing a frequency response similar to the teeth of a comb. Used on encoded video to select the chrominance signal and reject the luminance signal, thereby reducing cross chrominance artifacts, or conversely, to select the luminance signal and reject the chrominance signal, thereby reducing cross luminance artifacts. Comb filtering successfully reduces artifacts but may also cause a certain amount of resolution loss in the picture.

combiner

In digital picture manipulators, a device that controls the way in which two or more channels work together. Under software control, it determines the priority of the channels (which picture appears in front and which ones in back) and the types of transitions that can take place between them.

common

A point that acts as a reference for circuits, often equal to ground. In video switchers, for example, tally and GPI relays, when activated, often provide a closure to a common input, which may be ground or some other voltage, such as the voltage used to drive tally lamps.

common carrier

In telecommunications, a government regulated private company that furnishes the general public with telecommunications service facilities.

common mode

Signals identical with respect to amplitude, frequency, and phase that are applied to both terminals of a conductor and/or both the input and reference of an amplifier.

common mode hum

Typically, power line interference which appears on both terminals of a conductor with the same phase, amplitude and frequency.

common mode range

Amplitude of the common mode signal (signal of the same frequency, amplitude and phase) that can be applied to the two differential inputs of an amplifier and maintain its performance. See *differential amplifier*.

common mode rejection (CMR)

A measure of how well a differential amplifier rejects a signal which appears simultaneously and in phase at both input terminals. As a specification, CMR is usually stated as a dB ratio at a given frequency.

common mode rejection ratio

1. For a differential amplifier, the ratio of differential gain to common mode gain.

2. Expressed in dB, the ratio of common mode input voltage to output voltage.

3. For an operational amplifier, the ratio of the change in input offset voltage to the change in common mode voltage.

Communications Interface (CIF)

Communication Interface. A Series 7000 optional CIF module is a general purpose communications interface module used to augment the capability of the Series 7000 MCPU when the MCPU is housed in a standalone Control Frame. Each CIF module will support four mezzanine submodules; mezzanine submodules in turn provide a particular communications capability.

component analog

See *component video*.

component digital

A digital representation of a component analog signal set, most often Y, B-Y, R-Y. The encoding parameters are specified by ITU-R BT.601-2 (CCIR 601). The parallel interface is specified by ITU-R BT.656 (CCIR 656) and SMPTE 125M.

component digital post production

A method of post production which records and processes video completely in the component digital domain. Analog sources are converted only once to the component digital format and then remain in that format throughout the post production process.

component island

A group of component video equipment used within a larger non-component facility.

component video

1. A video signal that keeps color and luminance information separate.

2. The unencoded output of a camera, videotape recorder, etc., consisting of 3 primary color signals: red, green, and blue (RGB) that together convey all necessary picture information. In some component video formats, these three components have been translated into a luminance signal and two color difference signals, for example, Y, R-Y, B-Y. See also *color difference signal*.

composite analog

See *composite video*.

composite digital

A digitally encoded video signal, such as NTSC or PAL video, that includes horizontal and vertical synchronizing information.

composite sync (CS)

A video synchronizing signal that contains horizontal and vertical synchronizing information. Often referred to simply as sync.

composite video

1. An encoded video signal, such as NTSC, PAL and D-2 video, that includes horizontal and vertical synchronizing information.

2. An encoded video signal that combines color information with luminance information.

compress

A digital picture manipulator effect where the picture is squeezed (made proportionally smaller).

compression

1. Improper video signal level caused by non-linearity in a circuit's transfer function. Results in lack of detail in either the black or white areas of the video picture. Can also be caused by pointing a video camera at a scene that has a total black-to-white range wider than a standard television signal can handle.

2. Reduction of the size of digital data files by removing redundant information (non-lossy) or removing non-critical data (lossy).

compression artifacts

Compacting of a digital signal, particularly when a high compression ratio is used, may result in small errors when the signal is decompressed. These errors are known as "artifacts," or unwanted defects. The artifacts may resemble noise (or edge "busyness") or may cause parts of the picture, particularly fast moving portions, to be displayed with the movement distorted or missing.

configuration

A configuration specifies all of the modifiable parameters for a routing system component, whether that component is hardware or software. In newer GVG routing systems there are for example, separate configurations for the matrix controller, panels, and the router engine. In some older routing systems such as the SMS 7000 there is also a system configuration. Also see matrix controller configuration, *panel configuration*, router engine configuration, or system configuration (SMS 7000).

configured ... controller

A controller which has had a configuration applied to it. Controllers which can be configured include matrix controllers, legacy node controllers, and enhanced node controllers.

conforming

Transferring edit decision list information gathered from an off-line edit to an on-line edit for final assembly.

constant duration mode

The addition of key frames to an existing key frame effect in such a way that the overall length of the effect does not change.

continuity

In digital picture manipulators, the characteristic of location/positioning that determines whether the motion path continues smoothly, without interruption.

contouring

Digital video picture defect caused quantizing at too coarse a level.

contrast

The range of light-to-dark values of the image which are proportional to the voltage difference between the black and white voltage levels of the video signal. The contrast control is an adjustment of video gain (white bar, white reference).

control bus

In routing switchers, the interconnecting communications path between control panels or devices and the routing matrices.

control device

Panel, computer, or other device that controls router crosspoint selections.

control panel

A device used for entering operational commands to a device.

control panel bus (CP bus)

Communications path between control panels or devices and the MCPU which controls the routing matrices.

control panel Source-Destination exclusion set

This type of exclusion set is available only on Encore and newer routers. In the SMS7000 this was referred to as Destination Exclusion set meaning that all sources were excluded from a particular destination.

control processor

Circuits used to generate or alter control signals.

control room

A room near a television studio where the director and production crew control the show. The control room contains the video switcher, graphics equipment, audio mixer, and banks of video monitors.

control signal

A signal used to perform an alteration of or transition between video signals.

control track

The area on a videotape where frame pulses are recorded.

control track frame pulse

A pulse laid down on videotape by a videotape recorder to identify the frame locations on the videotape. This enables the VTR to lock up correctly framed during playback.

controllable Levels

A term and concept used in GVG routers up to and including the SMS 7000. This user-defined list of levels itemized which Levels a panel or panels could view and/or control. In Encore and newer routers, we use the opposite perspective and consider all Levels "controllable" unless they are listed in an exclusion set. For customers migrating to the newer router products, we automatically convert controllable Levels to Level exclusion sets by listing what is not in the legacy list of controllable Levels. Salvos in older routers use a similar concept called Salvo permission sets. In Encore and newer routers Salvo permission sets are converted to Salvo exclusion sets.

controllers

Part of the control system, Controllers are circuit modules which interface between the MCPU and signal processing modules.

Conventional Definition Television (CDTV)

The analog NTSC, PAL, SECAM, and related television systems.

core

In fiber optic cable, the core is the light-transmitting material at the center of the fiber.

coring

A video noise gating operation in which pixels below a predetermined luminance threshold are replaced by “clean” black pixels. Useful in additive keying, where the additive mixer cuts a hole in the background

video and adds the entire fill video, including the black matte surrounding the fill. Coring the fill video before keying substitutes a noise-free black around the fill. During keying, the black regions add nothing to the background and thereby eliminate noise surrounding the fill video that might otherwise add to the background, causing noisy key edges.

COS

See *cubicle or studio (COS)*.

cositing

Relates to SMPTE 125M component digital video, in which the luminance component (Y) is sampled four times for every two samples of the two chrominance components (Cb and Cr). Cositing refers to delaying transmission of the Cr component to occur at the same time as the second sample of luminance data. This produces a sampling order as follows: Y1/Cb1, Y2/Cr1, Y3/Cr3, Y4/Cb3, and so on. Cositing reduces required bus width from 30 bits to 20 bits.

coupled mode

Selection of either AC or DC coupling. See *AC coupling*.

coupler

In telecommunications, an optical device used to interconnect optical fibers.

coupling

The manner in which two circuits or systems are connected. Usually this involves either AC or DC coupling.

coupling loss

In telecommunications, the optical power loss incurred in connecting optical fibers.

CPE

Customer premises equipment.

CPO

Clear Protected Output.

CPU

Central processing unit.

crawl

Text or graphics moving horizontally across the screen.

CRC

Cyclic redundant check.

Cr/Cb

See *Y, Cr, Cb*.

Cr/Cb differential delay

The amount of phase difference between two color difference signals as they travel through parallel circuit paths.

critical area

See *Safe title area (safe action area)*.

crop

In GVG digital picture manipulators, a function which defines the edges of the manipulated image, similar to cropping a photograph.

cross chrominance (cross color)

Moire or rainbow artifacts in an encoded video picture caused when the video encoder or decoder misinterprets luminance detail as color information. Especially noticeable when the talent wears pin-striped clothing.

crossfade

A transition between two pictures where the first picture dissolves to black, and then black dissolves to the second picture.

crosshatch

A video test signal containing a grid pattern used for convergence and linearity adjustments and on-screen alignment of graphics.

cross luminance (dot crawl, chroma crawl)

A video artifact that occurs when the decoder in a monitor or receiver misinterprets areas of high color saturation as luminance information. This causes tiny colored dots to creep along the vertical or horizontal edges of objects.

crosspoint

An electronic switch, usually part of an array of switches, that allows video or audio to pass when the switch is closed.

crosstalk

1. Undesired transmission of signals from one circuit into another circuit in the same system. Usually caused by unintentional capacitive (AC) coupling.

2. Signal interference from one part of a videotape to another.

cubicle or studio (COS)

A custom configuration set.

cue

Video editing term meaning to position a videotape at a specific point.

cue ahead

Video editing term meaning to fast forward or rewind a VTR to the next edit point in preparation for an edit.

current effect

A digital picture manipulation term. The current effect in the register that was last recalled.

current key frame

A digital picture manipulation term. The current key frame for each channel is the key frame in the current effect at which the channel is presently positioned.

current source memory

A digital picture manipulation term. Memory used to retain the most recent source-related parameters for each source.

current time

A digital picture manipulator term. The current time is the current position in the current effect. This time is the "glue" which binds multichannel effects and is expressed in terms of seconds and frames from the start of the effect. Negative times indicate events before the start of the effect.

cut (Take)

1. A transition between two video pictures which is instantaneous, without any gradual change.

2. A nearly instantaneous switch from one picture to another at the on-air output of the switcher. The switcher circuitry allows cuts only during the vertical interval of the video signal to prevent disruption of the picture.

cut bar

On a video switcher, a large pushbutton that causes a cut between program and preview video when pressed.

D

D1

A component digital video recording format that uses data conforming to the ITU-R BT.601-2 (CCIR-601) standard. Records on 19mm magnetic tape. (Often used incorrectly to indicate component digital video.)

D2

A composite digital video recording format that uses data conforming to SMPTE 244M. Records on 19mm magnetic tape. (Often used incorrectly to indicate composite digital video.)

D3

A composite digital video recording format that uses data conforming to SMPTE 244M. Records on 1/2" magnetic tape.

D5

A component digital recording format that uses data conforming to the ITU-R BT.601-2 (CCIR 601) standard. Records on 1/2" magnetic tape.

D6

Digital HDTV recorder using D1 tape.

DA

Distribution amplifier. The Series 7000 uses DAs to expand outputs.

DA

Directory assistance.

DAC (D-A, D/A, D-to-A)

Digital-to-analog converter.

DAL

Dedicated access line.

data compression

A technique that provides for the transmission or storage, without noticeable information loss, of fewer data bits than were originally used when the data was created.

data matrix

A signal processing matrix containing modules that route RS-422 or RS-485 data.

database record

Information that is persistent (survives the loss of electrical power) and stored on a computer system in a structured manner. The record must contain at least one *field* and generally contains information about a single subject, but may be related to other data through reference.

datakey

A plastic, key-shaped memory device containing an EEPROM used for off-line storage.

dB (decibel)

A measure of voltage, current, or power gain equal to 1/10 of a Bel. Given by the equations 20 log Vout/Vin, 20 log Iout/In, or 10 log Pout/Pin. See also *bel*.

dBk

A measure of power relative to 1 kilowatt. 0 dBk equals 1 kW.

dBm

A measure of power relative to 1 mW. 0 dBm equals 1 mW.

dBmv

A measure of voltage gain relative to 1 millivolt at 75 ohms.

dBr

This notation expresses the relationship between two program signal levels. It denotes the difference in dB between a measured program signal magnitude and a defined reference magnitude called zero relative level.

DBS

Direct broadcast satellite.

dBu

1. A United Kingdom term that shows comparison between a measured value of voltage and a reference value of 0.775 Volt, expressed under conditions in which the impedance at the point of measurement (and of the reference source) are not considered.

2. dB relative to 1 µV.

dBV

A measure of voltage gain relative to 1 volt.

dBW

A measure of power relative to 1 watt. 0 dBm equals 1 watt.

DC (dc)

Direct current.

DC component

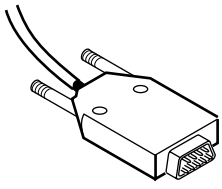
The portion of a signal that consists of direct current. The average value of a signal.

DCC-45 DS3 Digital Cross-Connect Switch

A Grass Valley Group DS3 digital switching system for video, audio, voice, or T1 or other data.

D connector

A type of connector that has a trapezoidal shell resembling a D.



DC coupling

A method of coupling one circuit to another so as to transmit the static (DC) characteristics of the signal as well as the varying (AC) characteristics. Any DC offset present on the input signal is maintained and will be present in the output. Some GVG distribution amplifiers may be set for true DC coupling. This method of coupling is the preferred mode for component analog video signals, particularly Y, R-Y, B-Y, which has negative-going energy in the R-Y and B-Y channels.

DC offset

The amount that the DC component of the signal has shifted from its correct level.

DC on blanking level

The absolute DC value of the blanking signal's voltage.

DC restoration

The re-establishment of the DC and low-frequency components of a video signal which have been lost by AC transmission.

DC signal bounce

Overshoot of the proper DC voltage level due to multiple AC couplings in a signal path.

DCT

Discrete cosine transform. A mathematical transformation used in many compression technologies.

DDR

Digital disk recorder. See *disk recorder*.

DDS

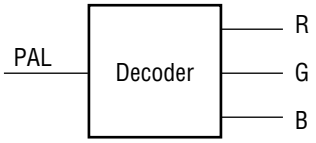
Digital Data Service.

decay trail

See *trail*.

decoder

A device used to recover the component signals from a composite (encoded) source. Decoders are commonly used in monitors and receivers for recovery of RGB signals to drive a color picture tube.



dedicated

A control which is assigned to perform only one function, i.e., dedicated to that function, as opposed to delegated to several functions. See also *delegate*.

de-emphasis

Reducing the level of higher audio frequencies during FM reception to compensate for pre-emphasis that was applied during transmission.

default

The setup condition existing when a device is first powered-up.

default channel

A term used for a digital picture manipulator having one or more control panels that can be assigned (delegated) to control any of several manipulation channels. The default channel is the one to which a control panel is delegated at power-up.

defocus effect

A digital picture manipulation term meaning a controlled blurring of the picture.

degauss

1. To demagnetize (erase) all recorded material on a magnetic medium, such as video or audio tape.

2. To demagnetize the shadow mask in a color picture tube.

degeneration

1. Loss of quality on a videotape typically due to multiple generations of copying the material.

2. To reduce the gain of an amplifier stage by applying negative feedback (feedback that is 180° out of phase) to the input.

delay

The time required for a signal to pass through a device or conductor.

delay line

An electronic component that delays a signal by a specified amount of time.

delay line response error

Frequency loss or overshoot caused by delay lines.

delay distribution amplifier

An amplifier that can introduce adjustable delay into a video signal path.

delegate

1. To use a single control panel or panel section to control two or more identical devices or functions. For example, a single keyer control panel may control 2 keyers, or a single control panel of a digital picture manipulator can control 2 manipulation channels. A switch selects which of the identical functions the panel is "delegated to" or assigned to control. The reverse is also possible: a single device or function can be delegated to any one of several control panels.

2. To assign panel controls to a particular operating function. Some panel controls (buttons, knobs, joystick) can affect more than one function. The operator can choose an alternative function by delegating the panel controls to that function (typically by pressing or holding down a panel button).

delta (offset)

In effects management systems, a data manipulation technique used in memory systems to allow the settings of control panel analog controls to be different from the analog values applied to the processing software.

demodulator

A circuit that demodulates or decodes the desired signal from amplitude and/or frequency modulation present on a carrier wave.

demultiplexer (demux)

A device used to separate two or more signals that were previously combined by a compatible multiplexer and are transmitted over a single channel.

demux

See *demultiplexer (demux)*.

depth mode

A mode in some GVG switchers and digital picture manipulators which automatically defines layering priority. This allows the layer closest to the viewer to automatically cover other layers. Can be used to create "intersecting planes" effects.

deserializer

A device that converts serial digital information to parallel digital.

desktop video

Video editing and production done using standard desktop computing platforms running add-on video hardware and software.

Destination (DEST or DST)

A routing switcher term describing the point to which a Source signal is routed. In Series 7000, a Destination may include one or more outputs, across multiple Levels, with any connector number offset (user-defined in system configuration). A Destination might consist of a video output on Level one and two audio outputs (stereo left and right) on Level two. Outputs cannot be shared between different Destinations. A Destination is mapped to specific signal matrix outputs on one or more Levels. On each Level a Destination may be associated with one or more outputs on multiple signal matrices. The user makes a connection within a signal matrix by "Taking" a Destination to a set of Sources on a set of Levels.

Destination Exclusion Set (DXS)

The SMS7000 method of excluding all sources from one or more destinations. This exclusion set is two tiered, meaning the MCPU (tier 1) can have a user-defined set of DST exclusions and Control Panels (tier 2) can have a separately user-defined set of DST exclusions. When used by control panels, Destination Exclusion Sets are included in a panel template before the template is downloaded to a particular control panel. A specific Destination Exclusion Set may be shared by more than one panel template. Also see *exclusion or exclusion set*.

Destination page

See *Destination (DEST or DST)* and page.

detector

A device that converts one kind of energy into another. For example, one kind of detector might convert light signals to electrical signals.

detent values

A digital picture manipulation term meaning points to which the picture can be made to snap. For example, when rotating a picture, snap points usually exist in 45° increments so that the operator can easily turn the picture 45°, 90°, etc.

deterministic

1. Attribute of systems whose behavior is specified without probabilities (other than zero or one) and predictable without uncertainty once the relevant conditions are known. Deterministic systems leave nothing to chance and are of necessity lawful. There are no options. Deterministic systems conform to the ideal of a machine in which wear and tear, mechanical failures and unreliabilities are absent. Modern computers are conceived as deterministic machines. Also see (antonym) *probabilistic, probability*.

2. Algorythms: An algorithm in which the correct next step depends only on the current state. This contrasts with an algorithm involving backtracking where at each point there may be several possible actions and no way to chose between them except by trying each one and backtracking if it fails.

DGND

Digital Ground.

D/I

Drop and insert. A point in the transmission where portions of the digital signal can be dropped out and/or inserted.

diagonal resolution

Picture detail in the diagonal direction versus horizontal and vertical resolution. Many video encoders and decoders sacrifice diagonal resolution in favor of enhanced horizontal and vertical resolution, resulting in blurring.

diagnostics

A program built into a device which tests the functionality of the device and reports the results. Used as an aid in troubleshooting.

DHCP

See *Dynamic Host Configuration Protocol*.

DID

Direct inward dialing.

dielectric

A material that does not conduct electricity. An insulator.

differential amplifier

An input circuit that rejects voltages that are the same at both input terminals but amplifies any voltage difference between them. This causes any signal, such as common mode hum, that is present on both sides to cancel itself. This system is used in all GVG 8500 series amplifiers.

differential DC

Maximum DC voltage that can be applied between the differential inputs of an amplifier while maintaining linear operation.

differential gain

A change in subcarrier amplitude of a video signal caused by a change in luminance level of the signal. The resulting TV picture will show a change in color saturation caused by a simultaneous change in picture brightness.

differential input

See *differential amplifier*.

differential looping input

A video input port that allows the signal to be looped through to another input.

differential phase

A change in subcarrier phase of a video signal caused by a change in luminance level of the signal. The hue of colors in a scene change with the brightness of the scene.

digital

1. Circuitry in which data carrying signals are restricted to either of two voltage levels, corresponding to logic 1 or 0. A circuit which has two stable states: high or low, on or off.

2. A signal that employs discrete levels corresponding to logic 1 or 0 to convey information.

Digital Borderline®

See ***Borderline®***.

digital components

Component video signals that have been digitized.

digital effects

Special effects created using a digital picture manipulator.

digital parallel distribution amplifier

A distribution amplifier designed to amplify and fan-out parallel digital signals.

digital picture manipulator (DPM)

A GVG term for digital video effects systems which can manipulate a video picture to change its size, shape, angle, etc.

digital to analog converter

A device that converts digital signals to analog signals.

digitizing pad (digitizing tablet)

A device that translates drawings from a tablet and stylus to a digital video format.

Digital Television (DTV)

The digital television broadcasting system that replaces analog television. DTV includes both HDTV and SDTV broadcast in digital form using MPEG-2 compression for video, AC-3 compression for multi-channel audio, and 8-VSB modulation for digital terrestrial transmission.

digital word

The number of bits treated as a single entity by the system.

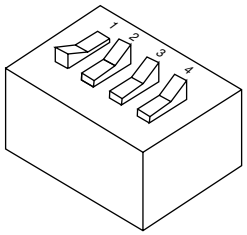
dim

1. A temporary, usually major, reduction in the level of audio output to monitor speakers.

2. In digital picture manipulators, an effect where the manipulated image tapers off to black or into the background picture.

dip switch (DIP switch)

Dual in-line package switch. A pc module mounted switch package of dual in-line style, typically mounting from two to eight switches and used in such functions as mode assignment and address selection.



director

The person who coordinates all aspects of a live television broadcast from within the control room.

discrete

Having an individual identity. An individual circuit component. A discrete circuit is one that uses individual transistors and other components rather than integrated circuits.

disk recorder

A video recording device that uses a hard disk drive or optical disk drive mechanism. Disk recorders offer nearly instantaneous access to recorded material.

dispersion

The characteristic of a light-conducting medium that causes the medium to transmit light of different frequencies at different velocities. Dispersion causes the refractive index of a given medium to vary as a function of wavelength. As it relates to optical fiber, this property influences both the effective numerical aperture and the bandwidth of an optical fiber.

dispersion effect

In optical telecommunications, the pulse spreading of an optical signal that takes place when it is transmitted over optical fiber. This effect is caused by the fiber's differing material index of refraction at the various wavelengths present in the optical signal.

dissolve (mix, cross fade)

A transition where one source of video or audio is faded down as the other is faded up. See also *effects dissolve (effects transition)*.

distortion

Undesired changes in the waveform of a signal.

distribution amplifier (DA)

A device used to replicate an input signal, typically providing 6 outputs, each of which is identical to the input. May also include delay and/or cable equalization capabilities.

dither

Typically, a random, low-level signal (oscillation) which may be added to an analog signal prior to sampling. Usually consists of white noise of one quantizing level peak-to-peak amplitude.

dither component encoding

A slight expansion of the analog signal levels so that the signal comes in contact with more quantizing levels. The results are smoother transitions. This is done by adding white noise (which is at the amplitude of one quantizing level) to the analog signal prior to sampling.

downlink

The communications path from a satellite to its ground station or from a transmitter to a studio.

downstream

1. Occurring after other devices in a signal path.

2. Routers: When discussing TieLines this term is used to identify the Level with the Destination that you want to take the Source to.

downstream keyer

A keyer that inserts the key after the effects system video output. This enables the key to remain on-air while the backgrounds and effects keys are changed behind it.

DPM

Digital Picture Manipulator. The GVG term for video equipment that performs digital effects such as compression and transformation.

drift

Gradual shift or change in the output over a period of time due to change or aging of circuit components. Change is often caused by thermal instability of components.

drive pulse(s) (pulse drives, drives)

A term commonly used to describe a set of signals needed by source equipment, such as a camera. This signal set may be composed of any of the following: sync, blanking, subcarrier, horizontal drive, vertical drive, PAL pulse, and burst flag.

driver

An electronic circuit which supplies input to another electric circuit.

drop-frame time code

SMPTE time code format that continuously counts 30 frames per second but drops 2 frames from the count every minute except for every tenth minute (drops 108 frames every hour) to maintain synchronization of time code with clock time. This is necessary because the actual frame rate of NTSC video is 29.94 frames per second rather than an even 30 frames. See *non-drop frame time code*.

dropout

A momentary loss or deterioration of video or audio during playback on a tape machine. Caused by momentary loss of tape contact with the playback head or by flaws in the tape.

dropout compensator

A circuit within a videotape recorder that detects dropouts and replaces them with information from the previous scan line.

drop shadow

A Borderline® mode which places a border below and on one side of a title key insert, giving a shadow effect.

DS0

Digital signal level zero, 64 kbps.

DS1

A telephone company format for transmitting information digitally. DS1 has a capacity of 24 voice circuits at a transmission speed of 1.544 megabits per second.

DS3

A telephone company format for transmitting information digitally. DS3 has a capacity of 672 voice circuits at a transmission speed of 44.736 megabits per second.

DSK

Downstream keyer.

DST

See *Destination (DEST or DST)*.

DSVOM

Dual Sync Video Output Monitor. Part of the DV Series.

DTMF

Dual-tone multifrequency signaling.

DTS

Digital termination system.

dub

To copy a video signal to tape. To copy one tape to another. A copy of a videotape (noun).

Dubner

A manufacturer of sophisticated video graphic workstations, character generators, and still stores. Now merged with Grass Valley Group.

dumb terminal

A computer display terminal that serves as a conversational slave to a host computer. Has a keyboard for data entry but no computing power of its own.

duty-cycle

1. The ratio of operating time to total elapsed time of a device which operates intermittently, expressed in percent. 2. The ratio of the active time of a repetitive waveform to the full-cycle time, expressed in percent.

DVE

Digital video effects. A registered trademark of Nippon Electric Company. Refers to video equipment that performs digital effects such as compression and transformation.

DVTR

Digital videotape recorder.

Dynamic Host Configuration Protocol

DHCP is a protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. DHCP also supports a mix of static and dynamic IP addresses. DHCP is used on the Encore Control Panel LAN to simplify network configuration and administration.

Dx

A 1/2" composite digital video tape format.

E

E Series DS3 Digital Video Transmission System

A cost-effective digital transmission system for video, stereo audio, voice and data made by Grass Valley Group.

EAGLE V™

A GVG 96 x 10 video-only routing switcher optimized for the security market.

EAV

End of active video in component digital systems.

EBU TECH.3267-E

The EBU recommendation for the parallel interface of 625 line digital video signals. A revision of the earlier EBU Tech.3246-E, which in turn was derived from CCIR-601 and contributed to CCIR-656 standards.

EBU

European Broadcasting Union. An organization of European broadcasters that, among other activities, produces technical statements and recommendations for the 625/50 line television system.

EC I/F

External Control Interface.

ECL

A family of high speed, low power IC logic devices.

ECSA

Exchange Carriers Standards Association.

EDH

Error detection and handling. Proposed SMPTE RP-165 for recognizing inaccuracies in the serial digital signal. It may be incorporated into serial digital equipment and employ a simple LED error indicator.

EDI

Electronic Data Interexchange.

E-Disk™

Disk storage system for E-MEM effects on some GVG video switchers.

edit controller (editor, editing computer)

A control system (usually computerized) which allows control of videotape machines, a video switcher, and other devices remotely from a single control panel. An edit controller, in conjunction with the other equipment that comprises the complete editing system, enables production of finished video programs which combine video and audio from several different sources.

edit decision list (EDL)

A list of edit decisions accumulated in a video editor. The list typically includes the source, in time, and out time for each edit.

edit mode

In some GVG digital picture manipulators, a mode which allows effects to be created and modified.

edit suite

Room where editing is done.

editing

Production of finished videotape from source tape. Editing usually involves the use of an computer editing system to select scenes and audio from multiple video and audio sources and record them into a finished program on a single videotape.

editor

An editing system operator. Also the informal term used for an edit controller.

editor interface

A serial communications link between an edit controller and peripheral devices, such as a video switcher and tape machines. The editor interface allows the edit controller to send control commands to the peripherals and receive status reports from the peripherals.

editor port

The interface connector and circuits on a device, such as a switcher, which enable communications with an edit controller.

EDL

Edit decision list.

EDL-XT™

An option package for some GVG edit controllers that includes the 409™ list cleaning program, the Trace™ program for multi-generational editing and first-generation auto assembly, the XEDL™ program for edit list translation and serial input/output, an internal modem, and other disk and file utility programs.

EDP

Eight Destination Paging control panel.

E-E mode

This stands for "electronics to electronics" and is a VTR mode in which the VTR processes the signals that it would normally use during recording but does not actually record onto the tape.

EEPROM

Electrically erasable programmable read only memory. A type of memory chip that can hold data even when power is removed. The memory can be erased electronically so that new data can be stored.

effect file

In digital picture manipulators, a collection of sectors on the disk which represents one complete effect.

effect register

In digital picture manipulators, an area in controller memory representing one complete effect.

effects

The process of combining two or more video images to create a new composite image.

effects dissolve (effects transition)

An automatic smooth transition of analog control settings in a mixer from some initial setting to a different end setting. For example, the position of a pattern or key mask can be moved between programmed points, or the hue of a color matte can be changed in real time, creating a color transition. Similar to a key frame except that only two positions are stored, the beginning and ending positions.

effects memory

The ability of a video production switcher to store and recall effects created on the system by use of computer control techniques. See *E-MEM®*.

effects processor

The portion of the switcher that performs mixes, wipes and cuts between background and/or effects key video signals.

effects send

A video switcher feature that allows a key source to be selected at the switcher and then sent to a digital picture manipulator for manipulation. The manipulated key and fill video are then returned to the switcher's keyer for keying ("flying" a key) over background video.

effects system

The portion of the production switcher that performs mixes, wipes and cuts between background and/or special effects key video signals.

EFP

Electronic field production, meaning to produce a video production in the field instead of in a studio.

efx

Effects.

EIA

Electronic Industries Association, an American organization that writes recommended practices and standards for television.

eight zero substitution

See *B8ZS (Eight zero substitution)*.

electrical length

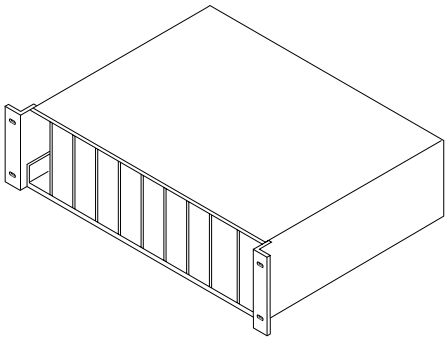
The time it takes for a signal to pass through a given path.

electron beam

A stream of electrons in a cathode-ray (picture) tube which is focused at a phosphorescent screen to create pictures. The beam is directed at its target by deflecting coils or plates. 2. A stream of electrons focused on the light sensitive surface of a camera pickup tube.

electronics frame (tray)

A metal cabinet that holds circuit boards. Also see *frame*



E-MEM®

1. Effects memory. A memory system invented by GVG for switchers and digital picture manipulators. The E-MEM system stores effects for later recall.

2. An effect learned or programmed into a Grass Valley Group device for later recall.

EMI

Electromagnetic interference. Undesirable electromagnetic waves that are radiated unintentionally from an electronic circuit or device into other circuits or devices, disrupting their operation.

EMPHASYS™

Grass Valley Group product that digitally encodes and decodes color difference or RGB video formats into composite analog or digital (D2) video with a significant improvement in artifact removal.

embedded audio

Digital audio that is multiplexed onto a serial digital video data stream.

emulated node controller

A SMS 7000 software-only node controller which, along with its configuration, resides in MCPU RAM. Typically created and configured to interface to and control other routing switchers including Grass Valley Group's Horizon systems and some other manufacturers' routers. The non-Series 7000 router is then controlled through a Serial I/F Mezzanine board. Emulated node controllers can be divided into as many as eight Slices, one *Slice* per level of a non-Series 7000 router.

enable

To turn on or make available.

encoded chroma key

A chroma key that uses an encoded video signal instead of separate RGB or Y, Cr, Cb signals for deriving the key.

encoded subcarrier

A reference system created by Grass Valley Group to provide exact color timing information. Encoded subcarrier simplifies system timing design when used with devices like STM-85N Source Timing Modules and CBM-85N Color Bar Modules.

encoder

In video, a device that forms a single, composite color signal from a set of component signals.

ENG

Electronic News Gathering, meaning to use a portable video camera and recorder to record news events in the field.

enhanced node controller (ENC)

Designed to replace the *node controller (NC)*, it has an ethernet interface and can be used in all Classic and DV Series matrices. The ENC is required for Dual Control of a matrix by the Series 7000 Control System and an external device such as a PC. It's also required for upgrading SMS7000 systems for Encore control. The ENC does not support the Kscope Interface Mezzanine.

enhancing

Electronically adjusting the quality and sharpness of a video image. May also refer to sweetening audio, for example, by adding laugh tracks and sound effects.

EPLD

Erasable programmable logic device. An IC containing a large number of logic gates whose interconnections are programmable for specific applications. Additionally, the devices can be erased and reprogrammed.

EPROM

Erasable programmable read only memory. A type of memory chip that can hold data even when power is removed. The memory can be erased, usually by ultraviolet light exposure, so that new data can be stored.

EQ

equalization.

EQ network

A network connected to a circuit to correct or control its transmission frequency characteristics. See *equalization*.

equalization

1. Process of altering the frequency response of a video amplifier to compensate for high-frequency losses in coaxial cable.

2. In audio, to improve the sound quality by increasing or decreasing the gain of the signal at various frequencies.

equalizer

A device that compensates for undesired amplitude-frequency and/or phase-frequency shifts in a signal.

equalizing DA

A distribution amplifier that incorporates cable equalization. GVG offers a broad range of equalizer types to match the characteristics of most popular cables.

equalizing pulses

In an encoded video signal, a series of twice-line-frequency pulses occurring during vertical blanking before and after the vertical synchronizing pulse. Different numbers of equalizing pulses are inserted into different fields to ensure that each field begins and ends at the right time to produce proper interlace. The twice line rate also serves to maintain horizontal synchronization during vertical blanking.

ERR

Error. This is commonly found on the modules to identify the red error LED.

error concealment

In digital video recording systems, a technique used when error correction fails. Erroneous data is replaced by data synthesized from surrounding pixels.

error correction

In digital video recording systems, a scheme that adds overhead to the data to permit a certain level of errors to be detected and corrected.

Error detection and handling

See *EDH*.

escutcheon

A plate that covers an opening, typically in a control panel or electronics frame.

escutcheon mount

A control panel designed to mount into an opening in another control panel.

ESP

Enhanced Service Provider.

essential area

See *Safe title area (safe action area)*.

Ethernet

A type of high-speed network for interconnecting computing devices. Ethernet is a trademark of Xerox Corporation, Inc.

ETN

Electronic Tandem Network.

E'_U (U)

See *U*.

E'_V (V)

See *V*.

event

In videotape editing, a sequence of actions taken by the editing computer and recorded in a single pass.

Event Stacker

An MS-DOS program option used with the GVG MASTER-21™ Master Control Switcher to stack sequences of video, audio, and key events and load those sources into the Preset bus for transition to the Program bus.

exclusion or exclusion set

A user-defined list of one or more Sources, Destinations, Levels, or Salvos which are excluded from control or access by a panel(s) or Router Engine. Sources, Destinations, Levels, and/or Salvos can not be mixed in an exclusion set. Exclusions can be global, that is unavailable to any panel, when applied to the router engine (MCPU for the SMS 7000). For the Encore and newer routers only, exclusions can also be set- and panel-specific when a panel uses a specific list (exclusion set) in its configuration. Note that these exclusions are set-specific but may be shared by one or more panels. What is omitted by one set can still be available to other panels which don't use that exclusion set.

For routers it is presumed that all Sources and Destinations are available unless listed in an exclusion set and that the exclusions may be global or set- or panel-specific, depending on the router and method used for exclusion. For that reason exclusion set terminology is used in newer products and the inclusion or *permission set* legacy term and concept is avoided. In other words, we've reversed the perspective; everything is available unless it's specifically excluded.

Extended Studio PAL

A 625 line video standard that allows processing of component video quality digital signals by composite PAL equipment. The signal can be distributed and recorded in a composite digital form using D2 or D3 VTRs.

extender board

An adapter board that extends a module outside of its frame to allow easier access to the module's components for troubleshooting and alignment.

external background

Background matte video that is coming from a source outside of the equipment in question.

external fill

Fill video that is coming from a source outside of the equipment in question. See *fill*.

external key

A video key that uses an external key signal (a signal coming from a source outside the device in question) to cut the key hole and a separate fill signal to fill the hole.

external mask

A mask signal that is coming from a source outside of the equipment in question. See *mask*.

external reference

A source of timing information from a source external to the system in question.

external video/key

A video input signal to the device in question from some external souAn input signal to the switcher which is separate from the primary inputs and is used as a key source and/or fill source. Used as a key source and/or fill.

eye pattern

A waveform used to evaluate channel performance in digital video systems.

EZ-LINK™

Industrial quality video transmission over fiber-optic cable. Includes video and audio.

F

F

Fahrenheit. Also farad.

fade

þThe gradual disappearance of a picture to black (fade, fade-out, fade-to-black), or the gradual appearance of a new picture from black (fade-in, fade-up).

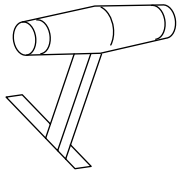
fade-to-black

1. A transition (dissolve) of the video picture to black.

2. A transition to black at the on-air (program) output of the switcher.

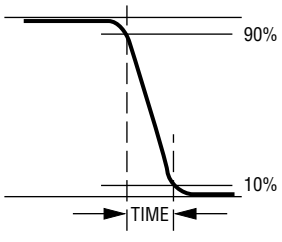
fader arm (lever arm, fader bar)

Typically a "T" shaped handle that is used for video transitions on a production switcher. Moving the fader arm between two limits of an arc creates a change in voltage or digital data that is used to control the transition.



fall time

The length of time during which a pulse decreases from 90 to 10 percent of its maximum amplitude.



false colors effect

A digital picture manipulator effect that permits user adjustment of colors in the picture.

fan-out (fanout)

(noun) The number of parallel loads within a given IC logic family that can be driven by a single output of a logic device.

fan out

(verb) To drive a number of parallel loads from a single output.

farad (F)

Unit of measure of capacitance.

far end

In telecommunications, the remote end of a communications link.

f-bit

In digital telecommunications transmissions, a framing bit, or sometimes only those framing bits used for synchronization.

FC

Frame Controller.

FCC

Federal Communications Commission. The executive body that regulates communication in the US.

FDDI

Fiber distributed data interface.

FDM

Frequency division multiplexing.

feed

A television signal source, typically from a remote location, such as a network feed or a satellite feed.

feeder lines

Television cables that distribute signals to various locations.

FET

Field Effect Transistor.

fiber bundle

A group of parallel optical fibers contained within a common jacket. A bundle may contain from just a few to several hundred fibers.

fiber optics

Use of optical cable to transmit images or signals in the form of light around corners and over distances with extremely low losses.

field

1. Half of the interlaced horizontal lines (262.5 in NTSC, 312.5 in PAL) needed to create a complete picture. Two interlaced fields create a complete monochrome frame or picture.

2. One scan of an interlaced video image. In interlace systems (1080i, for example) two fields are required to make a complete picture (video frame) because alternate lines are scanned. Note that on progressive systems (720p, for example), one scan contains all the image information, and so this single scan is called a frame rather than a field.

3. Databases: An area in a fixed or known location, having a specific purpose or type of data, and frequently a fixed size. One or more fields are contained within a *database record*. For example, in a form you fill out the box containing your surname is a field.

field DA

A distribution amplifier designed for use in adverse conditions typically found in remote applications. GVG field DAs incorporate clamping and the ability to equalize exceptionally long cable runs.

field programmable

Capable of being programmed at the customer's site.

field-time linear distortion

An unwarranted change in video signal amplitude that occurs in a time frame of 16 ms.

field upgrade

A product upgrade that takes place at the customer's site.

fill

In video keying, the fill is the video signal that is inserted into the "hole" cut in the background video by a key signal. See *key*.

fill video

A video signal which fills a hole cut in background video by a key source.

film chain

An arrangement of a film projector and a video camera to convert a film image into a video signal. A telecine.

film mode

Videotape editing done without time code.

filter

An electrical circuit that passes certain frequencies and blocks other frequencies.

filter artifacts

Defects in the video picture caused by filtering. Most commonly appear as ringing and loss of resolution.

fine H phase

A fine horizontal phase control.

firmware

Programs or instructions that are stored in read-only memories; firmware is analogous to software in a hardware form.

first come first served (FCFS)

Tieline status where it is not necessary to create a reservation to use the specified Tieline.

first generation

The first copy of a videotape. A copy of that copy is termed second generation.

flag

A parameter that can be set in a control panel template to control how the panel operates.

flare, camera flare

Color flashes or halos in the video picture caused by too much light shining directly into or reflecting into the camera lens. An adjustment called Flare on some GVG chroma keyers helps remove camera flare from the chroma key foreground.

flash (hit)

Interference or breakup during one field of video or less.

flash EEPROM

A programmable memory IC that can be reprogrammed while it remains in a circuit. Flash memory can usually be reprogrammed many times.

flash memory

See *EPROM*.

flat level

A signal that has an equal amplitude response for all frequencies within a stated range.

flat panel display

A display device sometimes used in GVG switchers and picture manipulators for displaying menus.

flat response

Output signal amplitude of a system is a faithful reproduction of the input amplitude for some range of specified input frequencies.

flip

A digital picture manipulator trans-formation which appears to turn the picture around its Y axis.

flip-flop

1. A video transition where the sources selected on the program and preset buses exchange places at the end of the transition.

2. A digital logic circuit whose output follows the signal present on the input at the time that a clock signal occurs.

3. Switchers: A transition where the sources selected on the **Program Background** and **Preset Background** buses are exchanged at the end of a transition. The original preset bus source becomes selected on the program bus, and the original program bus source becomes selected on the preset bus.

flip-flopping

Alternately connecting each of two different Sources to a single Destination (at a designated switching rate See *Chop*.

floor director

The person who directs the cameras and the talent during a live broadcast. The floor director stands in the studio beside the cameras.

flown images

Images that have been compressed and transformed in some way using a digital picture manipulator and which are then keyed over a background scene. The compressed image can be moved around on top of the background, giving the impression that the image is flying over the background.

flyback (retrace)

The electron beam movement of the camera or television monitor back to the starting point for the next line or field.

flying key

The movement of a keyed insert through a composite image. See *flown images*.

flying a mask

A key mask that is flown with the key. See *flown images*.

FM

Frequency modulation.

foot

Unit of measure of length. One foot equals 12 inches or 0.3048 meter.

forced foreground

A feature of some keyers. Uses a mask to force key fill video to appear wherever the mask occurs and completely inhibit background video. Useful for correcting the poor quality key (mixed background and fill) that results when the keying image is poorly differentiated from other images in the key source picture.

format

1. In television, the specific form of the signals that make up the video signal. For example, component versus composite format.

2. The organizational method of a particular electronic medium, such as videotape in C format or D1 format.

3. To prepare or pre-program a storage medium, such as a floppy disk, so that it can receive and store data.

format conversion

The process of both encoding/decoding and resampling digital rates to change a digital signal from one format to another.

FPGA

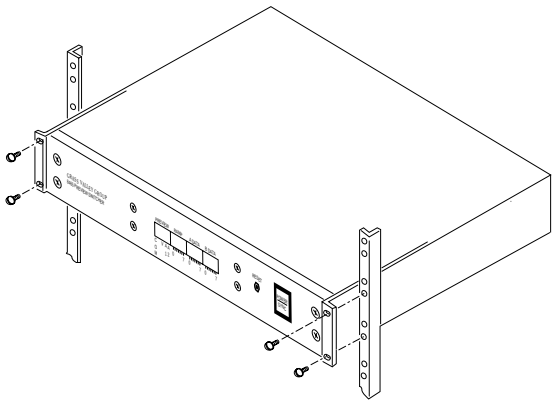
Field Programmable Gate Array.

frame

1. A complete video picture composed of two fields (two complete interlaced scans of the monitor screen). A frame consists of 525 interlaced horizontal lines of picture information in NTSC, 625 in PAL.

2. Switchers: One complete scan of a video image. For progressive video, all the lines in a frame are scanned successively from top to bottom. For interlace video, alternate lines are scanned, and so a frame containing all the picture information consists of two fields.

3. A metal cabinet (also known as a tray) which holds circuit boards. Also see *electronics frame (tray)*



frame buffer

Memory used to store a complete frame of video.

frame lock

Synchronization of the video signal with SMPTE time code.

frame rate

The number of frames presented per second. Note that for interlace systems the frame rate is half the field presentation rate.

frame synchronizer

A digital buffer that, by storage, comparison of sync information to a reference, and timed release of video signals, can continuously adjust the signal for any timing errors.

framestore

A device that captures, saves, and outputs a still video image.

free-run

Condition in which a sync generator is not locked to any outside source but is providing sync on the basis of its own internal clock.

free-run stability

The accuracy of a sync generator's output during free-run.

freeze

In digital picture manipulators, the ability to stop or hold a frame of video so that the picture is frozen like a snapshot.

freeze frame

The storing of a single frame of video.

frequency

The number of complete cycles of a periodic waveform that occur in a given length of time. Usually specified in cycles per second (Hertz).

frequency division multiplexing

A method of transmitting two FM carriers of different center frequencies by combining them and transmitting them as a composite.

frequency modulation (FM)

Modulation of a sine wave or "carrier" by varying its frequency in accordance with amplitude variations of the modulating signal.

frequency response

A measure of how effectively a circuit or device passes signals of different frequencies applied to it.

frequency response rolloff

A distortion in a transmission system where the higher frequency components are not conveyed at their original full amplitude.

front porch

The blanking signal portion which lies between the end of the active picture information and the leading edge of horizontal sync.

front timing

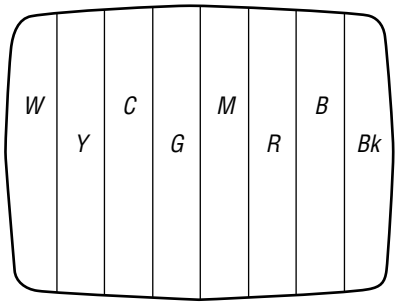
In video editing, to calculate a clock time by adding running times of the edits to the show start time.

FTB

Fade-to-black.

full field color bars

A test signal using color bars which extend from the top to the bottom of the raster.



fusion splice

A means of joining optical fibers together.

fx

effects.

FX

Foreign Exchange Service.

G

Gain

1. Any increase or decrease in strength of an electrical signal. Gain is measured in terms of decibels or number-of-times of magnification.

2. Switchers: The amplification factor applied to a key source by a keyer. Low gain (gain of 1) generally results in linear keying.

gain/frequency distortion

A circuit defect in which a change in frequency causes a change in signal amplitude. When this happens to a television signal, it can cause serious distortions in color saturation, as well as a lack of vertical line resolution due to luminance pulse ringing.

gamut

The range of valid voltages allowed for a video signal, or a component of a video signal. Signal voltages outside of the range (i.e., exceeding the gamut) may lead to clipping, crosstalk, or other distortions.

gate

1. A signal used to trigger the passage of other signals through a circuit.

2. A digital logic device whose output state depends on the states of the logic signals presented to its inputs.

gate array

A set of basic logic gates contained in one integrated circuit.

Gateway

The original Internet term for what is now called a router, routing switch, or IP router. In modern usage, the terms "gateway" and "application gateway" refer to systems which do translation from one native format to another.

GBR (green, blue, & red; RGB)

The three primary colors used in video processing, often referring to the three unencoded color camera outputs. The GBR letter sequence indicates the mechanical sequence of connectors in the SMPTE standard.

general purpose interface (GPI)

1. A parallel interconnection scheme that allows remote control of certain functions of a device. One wire per function.

2. Usually refers to a serial connection (RS232 or RS422 format) between computer modules. May also refer to any non-specific interface between equipment.

generation

A copy. A first generation copy is a copy of the master tape. A second generation copy is a copy of the first generation copy.

generation loss

Losses caused by copying from one videotape to another.

gen-lock (genlock)

To phase-lock the timing of one piece of equipment to another.

gen-lockable master

A main facility sync pulse generator that is capable of locking to an outside source of video.

gen-lock module

A module that can phase-lock to another source of video or sync.

ghost

In a television picture, a duplicate image offset from the main picture image.

GHz

Gigahertz. One thousand megahertz.

glitch

A general term used for a wide variety of momentary signal discontinuities, such as tears, rolls, momentary loss of picture, etc.

global channel, global control

In digital picture manipulators, allows an object constructed of separate layers, each from individual channels, to be manipulated as one layer.

GPI

general purpose interface (GPI). Refers to the HX-GPI or Horizon General Purpose Interface used to connect a Horizon Routing Switcher to a Series 7000 System.

graded index fiber

An optical fiber in which the core has a continually changing refractive index.

granularity

Routers: The smallest unit size available for a particular routing system. For example the granularity of a router may be 16 x 16, meaning that additional routing capacity must be added in minimum units of 16 x 16.

graphics display

A standard video output of the Kadenza or Kaleidoscope system showing wire frames of Kaleidoscope transformations. This is used to aid operators in quickly building multilayered effects.

Graphics Factory Halo

A Grass Valley Group video graphics system featuring dimensional video typography, designer painting, and 3D modeling and animation.

gray scale

Range of luminance levels from black to white.

green

One of the three primary color signals (red, green and blue) produced by cameras and other video sources.

greenie

Nickname for a brand of small screwdriver having a green handle, sometimes used for calibrating video equipment.

ground loop

A condition when two or more paths to ground exist and a voltage is induced unequally in these paths, causing interference, such as hum, buzz, or noise.

group

Encore: A collection of panels which acts as a single entity and shares the resources of all of the participating panels. The panels in the group do not have to be of the same type.

group delay

A signal defect caused by different frequencies having differing propagation delays (delay at 1 MHz is different from delay at 5 MHz). In the television picture, delay between the chrominance and luminance components of the video signal causes an object's color to shift outside the object's outline and also causes ringing in the luminance component.

GSC

Global Serial Channel. Refers to the GSC Mezzanine which provides additional BNC, serial communications ports for the Series 7000 MCPU. The four additional BNCs provided per mezzanine can be used as additional control panel bus or Tally System ports. The GSC can also be used to provide Node Control Bus expansion. In this capacity, only one of the four BNCs can be used because traffic density is too great for all four BNCs to be serviced by a single communications controller.

H

H

1. Henry. See *henry (H)*. Also hexadecimal (H or h).

2. Horizontal. In television signals, may refer to any of the following: a. The horizontal period or rate. b. The horizontal line of video information. c. The horizontal sync pulse.

H & V lock time

The length of time it takes for a device to lock to horizontal and vertical sync.

H blanking width

The width in terms of time occupied by horizontal blanking. The period of time from the end of active video of one line to the beginning of active video of the next line. During this time, the electron beam in a camera or monitor is turned off as it returns or retraces to the other side of the raster to begin a new scan.

H drive (horizontal drive)

A pulse used to trigger the next horizontal line. Generally a 2-4 volt negative-going pulse that typically starts at the beginning of horizontal blanking and ends at the trailing edge of sync.

H lock time

The length of time it takes for a device to lock to horizontal sync.

H phase

1. The horizontal phase relationship of one piece of equipment to another for studio timing purposes.

2. The phase of horizontal sync in relation to subcarrier. See *SC/H phase (subcarrier to horizontal phase)*.

Hanover bars

An undesirable artifact of interlaced scanning that looks like line-crawling venetian blinds.

hard black clip

Stops the composite video going below a predetermined level.

hard disk

A digital data storage device using a rigid, magnetic disk.

hard white clip

Stops the composite video going above a predetermined level.

Hardware

1. Electrical devices connected through physical wiring.

2. Electronic programming technique using physical connections and therefore essentially unalterable.

hard-wired

1. Electrical devices connected through physical wiring.

2. Electronic programming technique using physical connections and therefore essentially unalterable.

harmonic

A periodic wave having a frequency that is an integral multiple of the fundamental frequency. For example, a wave with twice the frequency of the fundamental frequency is called the second harmonic.

harmonic distortion

The production of harmonics at the output of a circuit when a periodic wave is applied to its input. The level of the distortion is usually expressed as a percentage of the level of the input.

HDTV

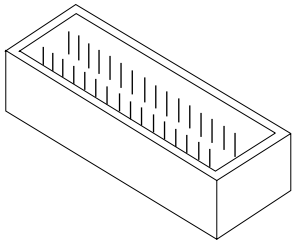
High Definition Television. Television with a resolution approximately four times that of Conventional Definition Television and a 16:9 (H x V) picture aspect ratio.

head end

The central point where cables originate in a cable distribution system.

header

A type of connector typically having a rectangular body made of plastic insulating material through which connecting conductor pins protrude.



heartbeat

A health status message provided by networked frames that are polled by MCPUs.

henry (H)

Unit of measurement of inductance. Because this is a very large unit, measurements are usually in a derivative thereof:
millihenry (mH) = 10^{-3}H,
microhenry (µH) = 10^{-6}H, or
nanohenry (nH) = 10^{-9}H

hertz (Hz)

Unit of measurement for the number of cycles of a waveform in one second. Cycles per second.

hi-con

High contrast, meaning high contrast video used as a key source.

High Definition Television (HDTV)

See *HDTV*.

high frequency (HF)

The frequency bands from 3 to 30 MHz.

high frequency loss

Loss of signal amplitude at higher frequencies, caused for example, by passing a signal through a coaxial cable.

high impedance loop-through

See *high Z looping input*.

high level language

Any symbolic computer language that controls a computer via commands that are similar to human language as opposed to the numbers used in machine language.

high tally

Control panel button is lit to full brightness (as opposed to dim), usually to indicate that the signal is on air.

high Z looping input

A high impedance input circuit which also includes an output to enable routing the signal to another piece of equipment.

hold-out matte

Area of a key where matte occurs behind the key.

hole cut

See *key*.

horizontal drive

See *H drive (horizontal drive)*.

horizontal (blanking) interval

The time period between lines of active video.

HORIZON™

A Grass Valley Group line of routing switchers capable of handling a large number of inputs and outputs.

horizontal line

A single horizontal scan of a camera or CRT beam. A number of these video scans together form a frame of video. There are 525 interlaced lines per frame in NTSC, 625 in PAL.

horizontal period

The length of time for a complete horizontal line of video information.

horizontal phase

See *H phase*.

horizontal resolution

Chrominance and luminance resolution (detail) expressed horizontally across a picture tube. This is usually expressed as a number of black to white transitions or lines that can be differentiated. Limited by the bandwidth of the video signal or equipment.

horizontal retrace

At the end of each horizontal line of video, a brief period when the scanning beam returns to the other side of the screen to start a new line.

horizontal sync pulse

The synchronizing pulse at the end of each video line that determines the start of horizontal retrace.

house reference

See *house sync*.

house sync

Television sync generated within the studio and used as a reference for generating and/or timing other video signals.

hub

A generic term for the central point of connection for the wires from workstations and nodes. A hub is a device that serves as the center of a star topology network. Hubs are commonly used to connect segments of a LAN. A hub contains multiple ports. When a

packet arrives at one port, it is copied to the other ports so that all segments of the LAN can see all packets. Hubs can be active (where they repeat signals sent through them) or passive (where they do not repeat, but merely split, signals sent through them). Intelligent (manageable) hubs include additional features that enable an administrator to monitor the traffic passing through the hub and to configure each port in the hub.

hue (tint, phase, chroma phase)

One of the characteristics that distinguishes one color from another. Hue defines color on the basis of its position in the spectrum–i.e., whether red, blue, green, or yellow, etc. Hue is one of the three characteristics of television color: See also *chroma*, *saturation (chroma, chroma gain)* and *luminance*. In NTSC and PAL video signals, the hue information at any particular point in the picture is conveyed by the corresponding instantaneous phase of the active video subcarrier.

hum bars

Horizontal black and white bars that extend over the entire TV picture and usually drift slowly through it. They are caused by a power line interfering frequency or one of its harmonics.

hum-bucker

A circuit (often a coil) that introduces a small amount of voltage at power line frequency into the video path to cancel unwanted AC hum.

hum rejection

In circuits, the ability to cancel interference in a video or audio signal, often at the 50 or 60 Hz power line frequency.

hum suppression

The cancellation of power line hum. See *humbucker*.

HX

Grass Valley Group Horizon Series Crosspoint Routing System.

hybrid circuit

A circuit that looks very much like a subminiature printed circuit board and is composed of a mix of thick film and surface mounted components. Hybrids make possible improved performance, extended reliability, and economy of space. Use of hybrids permits design of equipment such as entire processing amplifiers (GVG 7510 Series) on single PC modules.

Hz

hertz (Hz).

I

I

A designator used to name one of the color components of the NTSC video signal. The formula for deriving I from red, green, and blue is .60R – .28G –.32B. The term I also designates an M-Format color component.

IBOP

Interconnect /Break Out Panel. An option panel used to add BNC connectors to an audio matrix using 50-pin D connectors.

IC

Integrated circuit.

icon

In desktop computing and editing, a graphic symbol that represents a file, a tool, or a function.

ID or IDENT

1. Identification.

2. A software routine that identifies a device (e.g. a control panel). Includes such information as:

- controlled Destination
- active tally level
- panel name
- software version
- system name

idling current

The current drawn by a circuit, such as an amplifier, when no signal is present at its input.

IGMP

See *Internet Group Management Protocol (IGMP)*.

IMD

See *intermodulation distortion (IMD)*.

impedance

The total of the resistive and reactive opposition, measured in ohms, that a circuit presents to the flow of alternating current at a given frequency.

inbetweening (key frame interpolation)

Given two or more key frames, inbetweening is the act of generating the intermediate field rate information to cause the image to change from one key frame to the next.

inch

Unit of measure of length. One inch equals one twelfth of a foot or 25.4 millimeters.

index of refraction

The ratio of the velocity of light in a vacuum to the velocity of light in a given medium.

inductance

The capability to store energy in the form of a magnetic field. Measured using the henry (H) or a derivative thereof. See *henry (H)*.

init page

A menu for setting the proper editing system operating conditions at the start of an edit session.

injection laser

A solid state semiconductor device consisting of at least one p-n junction capable of emitting coherent or stimulated radiation under specified conditions. The device incorporates a resonant optical cavity.

in-point

The beginning of an edit; the first frame that is recorded.

input

A single physical, numerically designated connection point of an in-coming signal to a matrix. One or more Series 7000 inputs can be assigned to a Source name during System Configuration.

input offset

Unlike traditional multi-level systems, Series 7000 Sources do not have to use the same input connector number on each matrix Level (i.e. RGB inputs for one Source can use input #1 in one matrix for R, input #4 in another matrix for G, etc.) The offset of the input numbers used is logged in the System Configuration.

input return loss

See *return loss*.

input selector

A routing switcher or auxiliary bus used to expand the number of video or key inputs that can feed an input of a digital picture manipulator or keyer. Many keyers only accept one key source and fill, but by connecting an input selector to those inputs, many more source and fill signals become available just by selecting crosspoints on the input selector.

input-looping

A device's input loops back out so that the incoming signal can be sent elsewhere.

insert

A key fill signal.

insert edit (insert mode)

An edit mode in which the time code and control track already existing on the record tape are not replaced during the editing process. The system edits using the pre-recorded control track and time code.

insert event

A GVG editor command that takes an edit in the Mark Table and puts it into the Edit Decision List just after the line being pointed to.

insertion loss

Signal loss within a circuit. Usually expressed in decibels as the ratio of input power to output power.

integrated circuit

An electronic device in which both active and passive circuits are contained in a single miniature multi-pin package.

intensity modulation (IM)

Used in fiber optics as a method of transmission in which the analog signal directly modulates the light source.

interface

Device or circuit used to interconnect two pieces of equipment.

interlaced

Short for interlaced scanning. Also called line interlace. A system of video scanning whereby the odd- and even-numbered lines of a picture are transmitted consecutively as two separate interleaved fields. The two fields required to make a complete picture are called a frame.

intermodal dispersion

A difference in propagation time of photons traveling on different paths in an optical fiber.

intermodulation distortion (IMD)

Distortion that results when two or more pure tones produce new tones with frequencies representing the sum and/or difference of the original tones and their harmonics.

Internet Group Management Protocol (IGMP)

The standard for IP multicasting in the Internet. It is used to establish host memberships in particular multicast groups on a single network. The mechanisms of the protocol allow a host to inform its local switch or router, using Host Membership Reports, that it wants to receive messages addressed to a specific multicast group.

interpolation

In digital video, the creation of new pixels in the image by some method of averaging the values of neighboring pixels. This is necessary when an image is digitally altered, such as when the image is expanded or compressed.

in-time

The time of edit start.

I/O

Input/output. Typically refers to sending information or data signals to and from devices.

IP

Information provider.

IP address

32-bit numbers that uniquely identify Internet hosts. An IP address is comprised of four groups of up to three numerals each, separated by periods, for example: 127.0.0.0. These numbers are placed in the IP packet header and are used to route packets to their destination.

IRE (Institute of Radio Engineers)

Units of measurement dividing the area from the bottom of sync to peak white level into 140 equal units. One-hundred-forty IRE equals 1 volt peak-to-peak. The range of active video is 100 IRE.

ISDN

Integrated Services Digital Network.

iso

In videotaping, to record the output of each camera in a multiple-camera shoot on its own separate VTR.

ISO

International Standardization Organization.

isophasing amplifier

A timing device that corrects for small timing errors.

ITU

International Telecommunications Union. An international broadcast standards committee that replaced the CCIR.

ITU-R BT.601-2

Formerly known as CCIR 601. An international standard for component digital television from which was derived SMPTE 125M (was RP-125) and EBU 3246E standards. This International Telecommunications Union (ITU) recommendation defines the sampling systems, matrix values, and filter characteristics for both Y, B-Y, R-Y and RGB component digital television.

ITU-R BT.656

Formerly known as CCIR 656. The physical parallel and serial interconnect scheme for ITU-R BT.601-2 (CCIR 601). ITU-R BT.656 defines the parallel connector pinouts as well as the blanking, sync, and multiplexing schemes used in both parallel and serial interfaces. Reflects definitions in EBU Tech 3267 (for 625 line signals) and in SMPTE 125M (parallel 525) and SMPTE 259M (serial 525).

IXC

Interexchange carrier.

J

J number

Jack number.

jack

A socket or receptacle into which a mating plug is inserted in order to make an electrical connection.

jitter

1. An undesirable random signal variation with respect to time.

2. In Kaleidoscope, a function that causes a rapid alternation between field one and field two until a command is received to advance to the next frame. Used for certain digital recording devices that play one complete frame and then record one complete frame.

jog, jogging

Process of moving the videotape forward or backward one field or frame at a time.

JOGGER™

A GVG trademarked name for the jog control on GVG editors.

JOG-PAD™

A GVG trademarked name for a touch-pad jog control on GVG editors.

joystick

An electromechanical stick, similar to the control stick on an aircraft, used for hand positioning of graphic images on a video or computer monitor. For example, in video switchers a joystick is used for positioning wipe patterns.

JPEG

A still image compression standard developed by the ISO Joint Photographic Experts Group.

jump cut

In videotape editing, a jarring cut from one scene to another; discontinuity.

jumper

A short piece of wire used to complete a circuit temporarily or to bypass a circuit. Also, a shorting jack.

K

K

Kelvin. The standard unit of thermodynamic temperature. In our industry, most often used to measure the color (temperature) of light, with lower measurementsbeing toward the red end of the color spectrum and higher numbers being toward the blue end of the color spectrum. For example, average tungsten lighting is 3,200 - 3,400K and average daylight is 5,500K.

k

Kilo. One thousand.

kA

Kiloampere.

KADENZA™

A Grass Valley Group digital video switcher with layering and image manipulation capabilities.

KALEIDOSCOPE™

A Grass Valley Group digital effects system.

KALEIDOSCOPE™ Channel

Hardware capable of processing one layer of video with all of the Kaleidoscope video features including 3-D transformations and Kaleidoscope special effects (wipes, keys, recursive effects, mosaics, etc.).

key

1. Also called key source or key cut. A signal that can be used to electronically "cut a hole" in a video picture to allow for insertion of other elements such as text or another video image. The key signal is a switching or gating signal for controlling a video mixer which switches or mixes between the background video and the inserted element.

2. The composite effect created by cutting a hole in one image and inserting another image into the hole.

3. An effect where a portion of a background scene is replaced by a new scene or a caption. A signal called the key source is used to cut a hole in the background picture. The hole is then filled in with another signal called the key fill. In some cases, the source and fill may be the same signal (self key).

key accumulation

Simultaneous use of more than one key source and/or fill in a single keyer.

key auto drop

A keyer feature that allows automatic removal of a downstream key from air by pressing an appropriate crosspoint pushbutton.

key breakaway

See *key split*.

key bus

A video switcher crosspoint bus used to select key sources (hole cutters) and/or key fills. Signals available to the key bus are typically the same sources and fills that are supplied to the other switcher crosspoint buses plus additional external key sources and fills.

key channel

A channel of a digital picture manipulator that is used for manipulating key signals while the corresponding key fill video is manipulated by another channel.

key clip and gain

See *clip* or *Gain*.

key cut

See *key*.

key edger (Borderline®)

A device or circuit that produces border effects around the edges of a key.

key fill

In key effects, the video signal which fills the hole cut in background video by the key source.

key invert

For a luminance key, inverting the polarity of the key source to allow dark areas of the source video to cut holes in background instead of bright areas. For a chroma key, inverting the foreground and background key positions.

key mask

A key mode which allows use of a wipe pattern to prevent some undesirable portions of the key source from cutting a hole in background.

key source

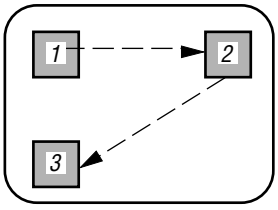
The signal that cuts a hole in the background scene for a key effect. In actuality, this signal controls a video mixer which switches between the background scene and the fill video; thus, the key source determines the shape of the key effect.

key fill

In key effects, the video signal that is said to "fill the hole" cut in the background video by the key source.

key frame (keyframe)

An effect that has been stored in memory, similar to a snapshot photograph. Individual key frames can be strung together to create an overall key frame effect, which is similar to animation.



key frame current effect space

The memory space used to store a key frame effect as you create or edit it.

key frame effect

An overall effect consisting of a series of effects snapshots called key frames. When the overall effect is replayed, the machine (switcher, DPM, etc.) automatically and gradually dissolves from one key frame to the next. A process called inbetweening defines what happens between key frames. The result is a moving animation effect.

key invert

A luminance key mode that inverts the polarity of the key source to allow dark areas of the source video to cut holes in the background instead of bright areas. A chroma key mode that inverts the foreground and background positions.

KeyLink™

A video switcher feature that allows a key source to be selected at the switcher and then sent to a digital picture manipulator for manipulation. The manipulated key and fill video are then returned to the switcher's keyer for keying ("flying" a key) over background video.

key mask

See *mask*.

KEY-MEM®

A Grass Valley Group effects memory storage system that saves E-MEM effects onto a removable EEPROM shaped like a key.

key memory

The memorized key clip, gain, and key type selections for each key source.

key mix

A keyer feature that alternately fades a key in over background video or fades it out.

key modifiers

Control functions on a keyer that permit alteration of the key in some way, such as shadow, invert, mask, and edge effects.

key priority

A function that determines which key appears on top in video switching/keying systems having multiple keyers all on-air at the same time.

key separate

See *key breakaway*.

key source

The signal that is said to "cut a hole" in the background scene for a key effect. This signal controls a video mixer that switches between the background scene and the fill video; thus, the key source determines the shape of the key effect.

key split

A video switcher key mode in which one key bus button selects the hole cutter and a different key bus button selects the fill video. Also called split key or key breakaway.

key video

The key fill, key source, or both.

keyer

An electronic circuit that creates a control signal to control a video multiplier based on selective information contained in a video signal.

keying

See *key*.

keypad set

A collection of up to 16 user-defined keys. Each key is comprised of one or more three-letter prefixes and one or more numeric suffixes (for example SRC55). Keypad sets can be saved and retrieved. The same keypad set can be used by several control panels, but each control panel can store only a limited number of keypad sets.

K factor

A specification rating method that gives a higher factor to video disturbances that cause the most observable picture degradation.

kHz (kilohertz)

One thousand hertz.

kilobaud (kbaud)

A unit of measurement of data transmission speed equalling one thousand baud. See *baud*.

kilobyte (kb)

One thousand twenty-four (1024) bytes (2^{10}).

kilogram

Unit of measure of weight. One kilogram equals 2.20 pounds.

kilohm (k ohm, k¾)

One thousand ohms.

KISS

Key Input Source Select. Used in configuring the Kscope Key Sources.

K-Mask™

GVG name for a switcher Mask Bus, which allows signals from the wipe, key, and mask rectangle generators to cumulatively modulate (modify) wipes, keys, or mattes. Allows users to build custom key masks from a variety of sources.

KRYSTAL™ Digital Effects System

A digital picture manipulator made by GVG.

KScope

The collective name for Kadenza and Kaleidoscope.

Kurl™

An option to the GVG Kaleidoscope™ Digital Picture Manipulator that provides such effects as page turns, page rolls, ripples, slits, and spheres.

kV

Kilovolt.

kVA

Kilovoltampere.

L

LADT

Local Area Data Transport.

Lamina™ Video Compositing

A feature of some GVG switchers that enables four video layers to be composited in one mix/effects. This composite image can then be used as a key source or a background in another mix/effects or the downstream keyer.

LampSaver (LS)

A feature that turns off the panel lamps to help prevent lamp burnout when the panel is idle for a specified period of time.

LAN

See *Local Area Network (LAN)*.

lap dissolve

See *background mix*.

laser diode

A junction diode that emits electromagnetic radiation or light when injected electrons under forward bias recombine with holes in the vicinity of the junction. Used to transmit light signals over fiber optic cables. The term laser is an acronym derived from light amplification by stimulated emission of radiation.

laser exciter

Supplies a signal that modulates a laser driver in a laser-driven communication system.

Last-X

An undo function included in some GVG E-MEM® systems. In video switchers, the Last-X register continuously stores the switcher setup before the last E-MEM register recall. Pressing the Last-X pushbutton recalls the switcher to the setup that existed before the last E-MEM recall. This provides quick recovery from accidental E-MEM recalls.

LATA

Local access and transport area.

latch

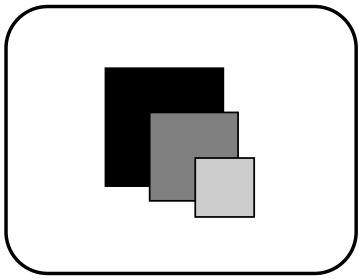
An electronic circuit that holds a digital signal once it has been selected. To latch a signal means to hold it.

layer

A single video image that is processed so that it can be inserted into the final composite image. There may be other layers in the image, and they can be prioritized as to layer location.

layering

Combining several video images to create a complex effect. With GVG digital switchers, multiple layer effects can be created in one recording pass.



launch power

The amount of light actually coupled into an optical fiber from the light source. This is typically expressed in dbm or microwatts.

LBO

Light build out. A telecommunications term meaning to simulate cable loss to maintain the required signal template.

leading edge

The transition of a pulse that occurs first, such as the positive-going transition of a high clock pulse.

learn

The act of storing control panel data (effects setups) into a memory register of an E-MEM system.

LEC

Local Exchange Carrier.

LED

Light emitting diode. In Grass Valley Group products, LEDs illuminate to indicate a specific state (such as normal, error, on-line, and so on).

lens

1. The clear plastic cover on a pushbutton.

2. The focusing mechanism of a camera.

level or Level

1. The intensity of an electrical signal.

2. Routers: In routing switchers, the term is capitalized to distinguish it from the intensity of an electrical signal. A Level is an independently controllable virtual designation describing the signal type or usage, of one or more Sources or Destinations in a routing switcher matrix. Different matrices may not contain the same Level, but virtual matrix architecture in the Series 7000 provides configurations that have more than one Level within a single physical matrix. A Level is defined by a set (or multiple sets) of crosspoints and their associated inputs and outputs on signal matrices. Typically, a routing switcher will have a Level of video and one or more audio Levels.

3. A name given to a group of signals that have something in common such as video, audio right, audio left, R, G, or B, etc.. This grouping becomes an independently controllable stratum of signals or cross-points within a physical matrix or routing system. A Level may include more than one virtual matrix as a slaved set. All elements in a Level respond to commands addressed to that Level. For example with an SMS 7000, RGB matrices are typically configured on the same Level, so that all three components switch together.

4. Switchers: A mix/effects (M/E) section of a video production switcher.

level exclusion set

This is the opposite of SMS 7000 logic where Levels had to be listed to be available in a panel configuration. With Encore, Levels only have to be listed if they should not to be available from a panel. Global exclusions can be applied to the router engine (or MCPU), whereas set- or panel-specific exclusions can be applied only to Encore and newer control panels. See *exclusion or exclusion set*.

Level pages

See *level or Level* and *page*. Level pages are not user-definable.

Level permission set

See *permission set*.

Level tie

Connection between a Remote (Begin) Level and a Local (End) Level.

lever arm (fader arm)

Typically a "T" shaped handle attached to a pair of potentiometers or shaft encoders. Used for manual video transitions on a video switcher or digital picture manipulator. Moving the lever arm between two limits of an arc creates a change in voltage or digital data that is used to control the transition.

light-emitting diode (LED)

A pn junction device that emits light when biased in the forward direction.

light modeling

A digital picture manipulator function that provides three-dimensional control of light sources in order to create lighting for objects.

lightning display

A method of presentation on a component video waveform monitor that displays luminance and color difference video signals to permit measuring their gain and timing.

light receiver

A photodiode used for receiving optical signals.

Level setting

Adjustment of video or audio signal levels.

limiter

An electronic device in which some characteristic of the output is automatically prevented from exceeding a predetermined value.

line

See *horizontal line*. See *program (PGM) output*.

linear

1. Having an output that rises or falls in direct proportion to the input.

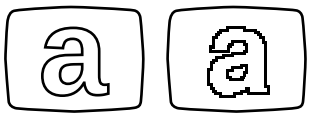
2. A straight-line motion path for objects in digital effects devices.

Linear Borderline®

Keyer feature that allows key edge effects to be added to linear keys.

linear key

A luminance key effect in which the gain of the key is approximately one, preserving the shaping of key source edges produced by anti-aliased character generators and digital video effects devices Linearr keying using anti-aliased sources produces smooth key edges.



linear keyer

A keyer that does linear keys.

linear pulse distribution amplifier

Linear pulse DAs amplify and fan-out the signal and will handle up to 4V p-p signals (pulses).

line cord

AC power input cable.

line-cord retention hardware

Safety hardware that keeps the power cord from being pulled out of its connections.

line driver

See *driver*.

line monitor

See *program monitor*.

line output

See *program (PGM) output*.

line-time

Occurring during a horizontal line of the video picture.

line time linear distortion

An unwarranted change in video signal amplitude that occurs in a time frame between 1 and 20 µs. The result is a gradual left-to-right shading of the TV picture.

line voltage

The voltage level of the main power source to a device.

link

1. A communication path between sites, such as a satellite link or a microwave link.

2. An E-MEM® mode of operation where registers are recalled in numerical order every time a transition is performed.

link source

Those Master 21 preset and program sources through which inputs from an expansion router are mapped.

list cleaning

The process of revising an edit decision list to correct duplicate or over-lapping edits so that over-recordings are eliminated.

list management

Editor functions that give you the ability to change the edit decision list.

LMS

Local measured service.

local

1. Local is used during configuration to identify the connectivity of Sources and Destinations. Local Sources and Destinations are inputs and outputs physically connected to the router which is using the related configuration file.

2. A control panel which is mounted to the front of a matrix frame or chassis.

3. Can referernece the perspective of the matrix controller. For example, a *TieLine* may be used between matrices to connect a "remote" source to a "local" destination.

Local Area Network (LAN)

High-speed, low-error data network covering a relatively small geographic area (up to a few thousand meters). LANs connect workstations, peripherals, terminals, and other devices in a single building or other geographically limited area. LAN standards specify cabling signaling at the physical and data link layers of the OSI model. Ethernet, FDDI, and Token Ring are widely used LAN technologies.

local aux bus

An auxiliary switching bus contained within the control panel of a video switcher, as opposed to a remote auxiliary bus panel.

local Level

Routers: When discussing TieLines this term is used to identify the Level with the Destination that you want to take the Source to.

local loop

In telecommunications, a communications channel between a subscriber and a local company.

location

In digital picture manipulators, a transform that allows movement of the picture along the X and Y axes.

lock

To synchronize two or more signals. See *genlock (genlock)*.

logical channel

In digital picture manipulators, there may be several physical manipulation channels, each of which can be independently assigned to any one of several control panels. If physical channel 2 is the first channel assigned to a control panel, it becomes logical channel 1 for that panel. Thus, logical channels are a method of numbering manipulation channels based on the order in which channels are assigned to a control panel rather than on the physical number of that channel in the electronics frame.

log time

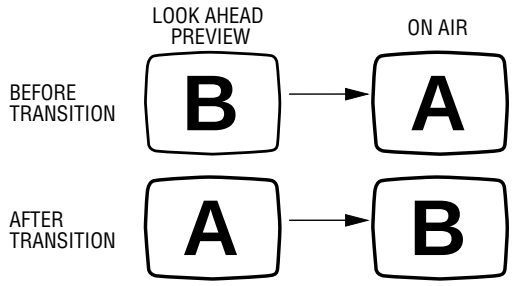
That time at which a new source is placed on the program bus, usually recorded in the station log for FCC accounting and customer billing purposes.

long haul

Long distance communications.

look ahead preview (preview)

The output of a switcher that allows you to observe an effect before it is placed on-air.



loopback

A test of transmission capability in which a signal is transmitted through a loop that returns the signal to the source. The test verifies the ability of the source to transmit and receive.

loop-through (loop-thru, looping)

A type of video input circuit that provides two or more input connectors. One connector accepts the video input signal for use within the device in question, and the other connector provides a tap off of the input for routing the input signal to another piece of equipment.

loss budget

1. The amount of anticipated signal loss over a given fiber optic path, including attenuation, connector loss, splice loss, and other losses.

2. The amount of signal loss fiber optic transmission equipment can sustain before exceeding the operating specifications.

low frequency chrominance response

A TV picture anomaly in which a change in time (1 µs to 60 µs) causes a change in chrominance amplitude. The picture shows unwarranted saturation variations from left to right.

low-pass filter

A filter network that passes all frequencies below a specified frequency with little or no loss but that discriminates strongly against higher frequencies.

low tally

Dim lighting of a control panel button. Usually indicates that a Source or function is selected but not currently on air.

LSB

Least significant bit. The bit that has the lowest value in a binary number or data byte.

LSI

Large scale integration.

lum, luma

Luminance.

luminance

The measurable, luminous intensity of a video signal. Differentiated from brightness in that the latter is non-measurable and sensory. The color video picture information contains two components: luminance (brightness and contrast) and chrominance (hue and saturation). The photometric quantity of light radiation.

luminance border

A non-color, luminance-only fill video for key borders and drop shadows.

luminance key

A key effect in which the portions of a key source that are greater in luminance than the clip level cut a hole in the background video.

luminance nonlinearity

A TV picture anomaly in which a change in luminance amplitude causes a change in luminance gain. The picture shows poor resolution between brightness levels in the nonlinear range.

M

M

Mega. One million.

m

Milli. One one-thousandth (1/1000).

M-format

A component video format invented by Panasonic for use in videotape recorders. The signal set consists of separate Y, I, and Q signals. The M refers to the way in which the tape is routed through the recording mechanism.

MII format

A second-generation component video format invented by Panasonic for use in videotape recorders. The signal set consists of separate Y, scaled R-Y and scaled B-Y signals. The M refers to the way in which the tape is routed through the recording mechanism.

mA

Milliampere. One one-thousandth of an ampere. (0.001 ampere).

MAC

See *multiplexed analog component (MAC) video*.

machine language

A computer language consisting of code numbers that serve as direct instructions for controlling a computer. Machine language is the lowest level of computer language.

machine room

A room near a studio and control room where the tape machines and electronics frames associated with the video switching and graphics equipment are located.

Macintosh®

An Apple® brand computer used in desktop video production.

macro

A function that provides a one-key-stroke streamlined operation in place of a procedure having many keystrokes.

MAG

Magnitude. Also magnify.

magnitude (MAG)

Related to switcher wipe rotation.

MAN

See *metropolitan area network (MAN)*.

managed switch

A network *switch* with a management interface

manipulation

In a digital picture manipulator, the various processes used to alter a video image, such as transformations and programmed effects.

mark in

To select the point where an edit will begin (the first frame that will be recorded).

mark out

To select the point where an edit will end (the first frame that will not be recorded).

mark table

A list of edit in and out points and the sources to be used.

married

Multiple Levels grouped to form the Begin or End of a TieLine.

mask

A key mode that allows use of a wipe pattern, a box shape, or an external mask signal to prevent some undesirable portions of the key source from cutting a hole in the background. The key occurs only in the area covered by the mask pattern; areas not covered by the mask pattern consist entirely of background video (no key).

mask bus

Hardware unique to the Kadenza switcher which provides the K-MASK features, including modification of wipes, keys, and mattes.

mask invert

A keyer mode similar to mask except that the sense of the mask is inverted so that the key appears only in the area not covered by the mask pattern. The area covered by the mask pattern will consist entirely of background video (no key).

master

1. An original recording (video or audio tape, for example) as opposed to a copy. 2. In the Master 21 switcher, those customer-defined parameters entered during system setup.

MASTER Interactive Distance Learning System

A fully interactive teaching and conferencing system for multiple schools and classrooms made by Grass Valley Group.

MASTER 21™

A Grass Valley Group master control switcher.

master control system

The switching link for video and audio sources used between a television facility and a transmitting device.

master reference synchronizing pulse generator (master SPG)

A synchronizing pulse generator that is the precision reference for an entire teleproduction facility.

MASTER SYSTEM™

Grass Valley Group interactive distance learning system that uses a variety of telecommunications equipment.

master timing

The main sync pulse generator used as the reference for any number of slave generators. A facility should have only one active master sync generator to feed synchronizing signals around the facility.

master/slave

1. In editing, the process in which one or more VTRs (slaves) are controlled by another VTR (master).

2. In sync generators, the process in which several sync generators (slaves) are controlled by one main sync generator (master).

match

In editing, a command that calculates the match frame for the time specified in the R-VTR's mark table IN column.

match-frame edit

An edit in which a scene already recorded on the master is continued with no apparent interruption.

material dispersion

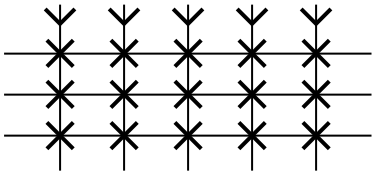
A characteristic of fiber optic transmission in which the velocity of light through a glass fiber varies with wavelength of the transmitted signal. Material dispersion can impair the bandwidth, information carrying, and distance capability of the system.

matrices

Plural of matrix.

matrix

A logical network configured in a rectangular array of intersections (or crosspoints) of input-output leads. In routing switchers, a signal switching frame configured such that any frame input may be selected at any frame output. In a color television set or an encoded chroma keyer, the section that combines the luminance and color signals and transforms them into individual red, green, and blue signals. In the TV set, these signals are then applied to the picture-tube grids. In the encoded chroma keyer, these signals are used to generate a chroma key.



matrix controller (MC)

Part of the control system, the matrix controller is a circuit module which interfaces between the router engine/MCPU and signal processing modules. It essentially passes messages between the router engine and the matrix crosspoint boards, transmitting commands and collecting and reporting status information from those modules. A Grass Valley Group *node controller (NC)* and *enhanced node controller (ENC)* are two types of matrix controllers.

matrix controller configuration

See *configured ... controller*.

matte

An internally-genereated solid color video signal that may be adjusted for chrominance, hue, and luminance. Matte is used to fill areas of keys and borders.

matte background

A solid color created from a matte generator and used as a background for a key.

matte copy

In video switchers, the ability to copy the settings of one matte generator to another.

matte fill

Matte video used to fill the hole in a key effect.

matte generator

A video generator that produces a solid-color output which can be adjusted for hue, chroma and luminance.

matte key

A key effect in which the inserted fill video is created by a matte generator.

MAU

See *medium access unit (MAU)*.

MB4

Programmable Multibus 4 Control Panel.

MB8

Programmable Multibus 8 Control Panel.

mbps

Megabits per second. Digital transmission speed in millions of bits per second.

MC

See *matrix controller (MC)*.

MCF Video Transmission System

A fiber optic multichannel digitized video and audio transport system made by Grass Valley Group.

MCO

Machine Control Only Control Panel.

M/E

Mix/effects.

MCPU

Master Control Processing Unit. This module provides:

- Overall system control
- Node manager interface to Series 7000 matrices
- Direct control panel support for up to 64 control panels
- Programmable real-time clock, date and time stamping for logged events
- Redundant controller interface (allows primary and backup MCPU pairs)
- Static RAM sizes (ranging from 128k bytes to 4M bytes) are supported
- Flash ROM sizes (ranging from 128k bytes to 4M bytes) are supported

MEC

Matrix Element Control. The MEC bus connects the control circuits of the various matrix modules in a frame section to the Node Controller. In some cases, when the MCPU and Node Controller reside in the same frame, these connections are all internal to the frame. More often, there are multiple Node Controllers in a system and a coaxial cable is run between Node Bus ports of each frame in the system. Only secondary systems and a particular compact configuration run external MEC buses.

MEDIC

Matrix Element Decode Integrated Circuit. Used as a communications bus between the MCPU and Controllers.

medium access unit (MAU)

A device for connecting equipment to an ethernet network.

meter

Unit of measure of length. One meter equals 3.28 feet or 39.37 inches.

metropolitan area network (MAN)

A relatively new city-sized (hence metropolitan) class of network. A MAN is larger than a *Local Area Network (LAN)* and smaller than a *Wide Area Network (WAN)*, typically between 5 and 50 km in diameter. MANs are usually owned by a network provider or consortium and offer very high speed connections to shared resources and/or access to other networks.

mezzanine

A printed circuit board that mounts on top of another printing circuit board to form a sandwich or stack. Sometimes called a submodule or daughterboard.

megabyte (Mbyte)

One million bytes (actually 220 or 1,048,576); one thousand kilobytes.

megahertz (MHz)

One million Hertz.

megohm (Meg, M¾)

One million ohms.

megawatt (M)W

One million watts.

MFJ

Modification of final judgement.

micro (µ)

One one-millionth (1×10^{-6}).

microampere (µA)

One millionth of an ampere (1×10^{-6} or 0.000001 ampere).

microprocessor

An IC package incorporating logic, memory, control, computer and/or interface circuits.

microsecond (µs)

One millionth of a second (1×10^{-6} or 0.000001 second).

microvolt (µV)

One millionth of a volt (1×10^{-6} or 0.000001 volt).

microwatt (µW)

One millionth of a watt (1×10^{-6} or 0.000001 watt).

microwave

A term applied to waves in the frequency range of 1000 megahertz and upward.

Miller squared coding

A DC-free channel coding scheme used in D2 VTRs.

milli

One one-thousandth (1/1000).

millimeter (mm)

One thousandth of a meter (0.001 meter). There are 25.4 mm per inch.

millisecond (ms)

One thousandth of a second (0.001 second).

millivolt (mV)

One thousandth of a volt (0.001 volt).

milliwatt (mW)

One thousandth of a watt (0.001 watt).

mix (dissolve, crossfade)

A transition between two video signals in which one signal is faded down as the other is faded up.

mix/effects (M/E)

A subsystem of a video production switcher where a composite of two or more images can be created. Each M/E typically includes crosspoint buses, keyer(s), and mixer.

mixer

1. European term for production switcher. Complete term is vision mixer.

2. A circuit which can mix two or more video signals.

3. An audio console for combining audio sources.

MML

Man-machine language. A programming language that allows a user direct programming access to machine functions.

modal dispersion

See *intermodal dispersion*.

modem

A device that transforms a typical two-level computer signal into a form suitable for transmission over a telephone line. Also does the reverse–transforms an encoded signal on a telephone line into a two-level computer signal. Modem is an acronym for modulator/demodulator.

module

A single circuit board or assembly of circuit boards that can be readily removed from an electronics frame without first having to remove screws or other mounting hardware.

modulator

A circuit that modifies a carrier wave by amplitude, phase, and/or frequency.

module

A printed circuit board or assembly that contains electronic components and slides into a cell.

module extender

See *extender board*.

moire

In video, a wavy pattern that appears as an artifact in the picture. Caused by two high frequency signals in the picture that mix together to create a visible low frequency beat pattern.

monitor

1. In video, a device that directly displays a video picture from a camera, videotape recorder, or special-effects generator.

2. A verb meaning to watch or listen to a signal.

mono-black

See *monochrome*.

monochrome

Black and white video. A video signal that represents the brightness values (luminance) in the picture, but not the color values (chrominance).

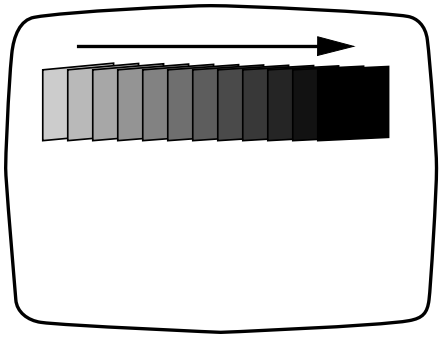
monolithic

1. A single slice of silicon substrate on which an integrated circuit is built.

2. Elements or circuits formed within a single semiconductor substance.

montage effect

In digital picture manipulators, a recursive effect that develops over time. A composite picture made up of several different key frame pictures. See *multifreeze*.



MOS

Metal-oxide semiconductor. A type of semiconductor material used in ICs.

mosaic effect

In digital picture manipulators, an effect where the picture seems to be made up of a number of small squares or tiles.

motherboard

A circuit board that accommodates plug-in cards or daughterboards and makes interconnections between them. May also provide cable input/output connections.

motion artifacts

Defects in the video picture that are evident during motion.

motion decay

A digital picture manipulator effect in which objects in motion are blurred.

motion estimation

An image compression technique that achieves compression by describing only the motion differences between adjacent frames, thus eliminating the need to convey redundant static picture information from frame to frame. Used in the MPEG standards.

MPEG 1, MPEG 2

1. Compression standards for moving images conceived by the Motion Pictures Expert Group, an international group of industry experts set up to standardize compressed moving pictures and audio.

2. A video compression mechanism employed by DTV to fit the digital data into an existing 6 MHz bandwidth transmission channel.

ms

Millisecond. One-thousandth of a second (0.001 second).

MSA

Metropolitan service area.

MSB

Most significant bit. The bit that has the most value in a binary number or data byte.

MS-DOS

A computer operating system developed by Microsoft for IBM personal computers and compatibles.

MSO

Multiple system operator.

MTS

Message telecommunications service.

multicast

To transmit a message to a select group of recipients. Multicasting refers to sending a message to a select group whereas broadcasting refers to sending a message to everyone connected to a network. Multicast messages are addressed to a multicast group defined by a range of addresses between 224.0.0.0 and 239.255.255.255. Multicast is used by Encore to distribute information that is required by a subset of hosts connected to the router LAN.

multiformat

Ability to process multiple signal types, such as standard digital, analog component, and analog composite inputs and outputs.

multifreeze

A digital picture manipulator key frame effect in which a number of images are arranged on the screen to create a montage.

multilayering

Layering of several video sources together at one time. This can reduce the number of recording passes required to create a complex effect of many layers.

multilayer effects

A generic term for a mix/effects system that allows multiple video images to be combined into a composite.

multichannel mode

A method of control panel delegation in which the panel is in control of more than one channel of a digital picture manipulator.

multimode effect

An effect that results from the difference in time required for different light signals to traverse the length of a multimode optical fiber.

multimode fiber

An optical fiber with a relatively large core diameter anywhere between 25 and 200 microns in which more than one mode of light propagation takes place.

multiplex

1. To transmit two or more signals at the same time or on the same carrier frequency.

2. To combine two or more electrical signals into a single, composite signal.

multiplexed analog component (MAC) video

A means of time multiplexing component analog video down a single transmission channel such as coax, fiber or a satellite channel. Usually involves digital processes to achieve the time compression.

multiplexer (mux)

Device for combining two or more electrical signals into a single, composite signal.

multiplication

1. In switchers, the duplication of wipe patterns. Instead of one pattern, multiple patterns all of the same shape appear on screen.

2. Signal mixing that takes place within a multiplier circuit.

multiplicative key

Method of keying that uses a multiplier controlled by a key signal to key a fill video signal into a background video signal. The key signal shapes the fill and background into complementary shapes that fit together to make a composite image. See also *multiplier*.

multiplied effect, multimove

In digital picture manipulators, an effect in which multiple copies of the picture are produced.

multiplier

A control circuit in which a control signal is multiplied with one or more video signals. The resulting video output signal is a mix of the input video signals and varies from full on to full off according to the state of the control signal. The ratio of the mix is determined by the control signal. A typical formula governing the output of a video multiplier is XY + (1-X)Z, where X is the control signal and Y and Z are the video inputs.

mute

A mode that turns off the audio output to the monitor speakers. Used when a microphone is in the same room as the monitor.

mV

Millivolt. One one-thousandth of a volt (0.001 volt).

mW

Milliwatt. One one-thousandth of a watt. (0.001 watt).

N

NAM

See *non-additive mix (NAM)*.

name(s)

Sources, Destinations, Levels, Salvos, Control Panels, Node Controllers, MCPUs, Mezzanine Boards, Tally Modules, and other components of the Series 7000 system all have names. When system software sets out to perform a function, a Take for instance, it looks for the Source name, determines the inputs involved, and Takes the Source to the Destination specified (by name). Naming conventions are discussed in configuration manuals. Names are important to operation and equally so to configuration.

named Destination page set

See *page set*.

named keypad set

See *keypad set*.

named salvo page set

See *page set*.

named Source page set

See *page set*.

nano

One one-billionth (1×10^{-9}).

nanometer

1×10^{-9} meter. Used in telecommunications as a measurement of signal wavelength.

nanosecond (ns)

One billionth of a second: 1×10^{-9} or 0.000000001 second.

narrow-band

1. A communications channel of less than full voice grade.

2. A frequency band whose width is greater than 1 percent of the center frequency and less than one-third octave.

narrow blanking width

An adjustment of the width of blanking used in the early stages of video production that allows for a wider than normal image area. The blanking width is later widened to normal, which in effect, crops the image area horizontally and produces a visually cleaner edge.

NB (node bus)

Node Bus. A name for the communications bus between the MCPU and Controllers.

NB (narrow band)

Identifies the 7500 Series AES Audio Matrices.

NC

See *node controller (NC)*.

NCTE

Network channel terminating equipment.

NDF

Non-drop frame mode.

near end

In telecommunications, the local end of a communications link.

negative NAM (non-additive mix)

Addition of two or more signals in a circuit in which the signal with the lowest instantaneous amplitude is passed.

NetCentral™

A Grass Valley Group SNMP manager that provides a suite of software tools to unify remote monitoring of network-based GVG products which use *SNMP*.

network

1. The affiliation of television or radio stations such as ABC, CBS, NBC, CBC, BBC, etc.

2. A combination of electrical elements, such as a group of interconnected computers.

neutral colors

The range of grey levels, from black to white, but without color. For neutral areas in the image, the RGB signals will all be equal; in color difference formats the color difference signals will be zero.

NICAM

Near instantaneous companded audio multiplex. A digital audio coding system originally developed by the BBC for point-to-point links. A later development, NICAM 728 is used in several European countries to provide stereo digital audio to home television receivers.

node controller (NC)

1. Controller used by Classic and DV Series matrices. The controller collects information from the modules in a matrix, sends the information to the system MCPU, and receives instructions from the MCPU. Also called NC.

2. Part of the control system, the node controller is a micro-controller based circuit module which interfaces between the MCPU and signal processing modules. It resides in an SMS Signal Frame and consists of a GSC communications coprocessor, a CPU, and five frame controllers. It essentially passes messages between the MCPU and the various modules, transmitting commands and collecting and reporting status information from those modules.

noise

Unwanted disturbance within an electronic system. Interference present in a video picture.

nominal

The most common value for a conductor or component that falls between maximum and minimum limits of a tolerance range.

non-additive mix (NAM)

1. A transition between two video signals in which the signal with the highest instantaneous amplitude is passed.

2. Addition of two or more video signals in a circuit in which the signal with the largest instantaneous amplitude is passed.

noncomposite video

A video signal that includes blanking but no sync.

non-condensing

In GVG equipment specifications, refers to atmospheric humidity that has remained in vapor form and has not turned to liquid where it contacts equipment surfaces. (GVG specifications usually permit humidity up to 90%, non-condensing.)

non-drop frame time code

SMPTE time code format that continuously counts a full 30 frames per second. Because NTSC video does not operate at exactly 30 frames per second, non-drop frame time code will count 108 more frames in one hour than actually occur in the NTSC video in one hour. The result is incorrect synchronization of time code with clock time. Drop frame time code solves this problem by skipping or dropping two frame numbers per minute except at the tens of the minute count.

non-linear encoding

Relatively more levels of quantization are assigned to small amplitude signals, relatively fewer to the large signal peaks.

nonlinearity

Having a gain varying as a function of signal amplitude.

non-sequential assembly

See *checkerboard assembly*.

non-sync detector

A circuit that detects when two video signals are not synchronous.

non-volatile

A memory system whose stored data is undisturbed by removal of operating power.

normalling jacks (through-connection)

Jacks that, when not acting as inputs or outputs, return the signal to its normal path by way of an internal spring connection inside the jack. (TV and portable radio earphone jacks are usually normalling.)

notch filter

An arrangement of electronic components designed to attenuate a specific frequency band. Also called a "band stop filter."

NPRM

Notice of proposed rulemaking.

NRZ

Non-return to zero. A data stream in which the logic level remains a 1 during transmission of consecutive data 1's.

NRZI

Non return to zero inverse. A video data scrambling scheme that is polarity insensitive. 0 = no change in logic; 1 = a transition from one logic level to the other.

ns

nanosecond.

NTIA

National Telecommunications and Information Agency.

NTSC

National Television Systems Committee. Organization that formulated standards for the NTSC television system. Now describes the American system of color telecasting which is used mainly in North America, Japan, and parts of South America. NTSC television uses a 3.579545 MHz subcarrier whose phase varies with the instantaneous hue of the televised color and whose amplitude varies with the instantaneous saturation of the color. NTSC employs 525 lines per frame and 59.94 fields per second.

numerical aperture

A number that defines the light gathering ability of a specific fiber. The numerical aperture is equal to the sine of the maximum acceptance angle.

Nyquist frequency (Nyquist rate)

The lowest sampling frequency that can be used for analog-to-digital conversion of a signal without resulting in significant aliasing. Normally, this frequency is twice the rate of the highest frequency contained in the signal being sampled.

O

OB

Outside broadcast. A remote broadcast.

OB truck/van

A mobile truck, van, or trailer that houses a remote broadcast switching and control center for broadcasting news and sports.

Off-air

1. Signals that are not currently going out to broadcast or videotape recording.

2. Signals received "out of the air" from a transmitter. To record signals off the air.

off-line

Not in use. Inactive.

off-line editing

Editing that is done using inexpensive, non-broadcast-quality equipment to produce an edit decision list (EDL) which will be used later for assembling a broadcast-quality program using more expensive, high-quality equipment.

ohm (¾)

The unit of resistance. The electrical resistance between two points of a conductor where a constant difference of potential of 1 volt applied between these points produces in the conductor a current of 1 ampere, the conductor not being the source of any electromotive force.

Omni-Key™

Grass Valley Group trademarked name for the keying system used in the Model 300 switcher.

ONA

Open network architecture.

on-air

The video signal in question is being broadcasted or videotaped. In Kaleidoscope, a portion of a channel's picture is on screen or its output is being combined with another digital effects processor to create the final video output.

On-Air Output

See *program (PGM) output*.

on-edge switching

A digital picture manipulator term meaning to switch input crosspoints (video sources) when the back (hidden) side of a double-sided transformed image rotates to the front and the front (visible) side rotates to the back. The switching occurs at the moment when only the edge of the image is visible.

on-line

In use. Active.

on-line editing

Final editing session in which the finished program master is assembled from the original production material.

one-shot (monostable multivibrator)

A circuit that produces an output signal of fixed duration when an input signal of any duration is applied.

on-the-fly

Setting edit points while VTRs are rolling. A non-precision method of editing similar to live video switching.

open-ended edit

Edit that has a start time but no designated out-point. An edit that runs until stopped by the operator.

operating program

The program (software or firmware) that controls a computer's functions.

optical waveguide

An optical fiber with a high refractive index clad with a material having a lower index of refraction.

optoisolator

A coupling device consisting of a light emitter and a photodetector used to couple signals without any electrical connection. Used for voltage and noise isolation between input and output while transfer- ring the desired signal.

orbit

A transform which causes an object to move in a circle around a point on the X-Y grid.

ORing diodes

Diodes arranged in such a way as to construct an OR gate.

orthogonal sampling

Sampling of a line of repetitive video signal in such a way that samples in each line are in the same horizontal position.

oscillator

An electronic device that generates alternating-current at a frequency determined by the values of the components in its circuits.

OSI

Open systems interconnection.

OSO

Originating service office.

OTDR

Optical time domain reflectometer. A device that tests losses in optical fiber.

out-point

An edit out-point. The first frame that is not recorded (after the end of an edit).

out-time

Edit out-point timing.

output

1. The current, voltage, power, or driving force delivered by a circuit or device.

2. A single physical, numerically designated connection point of an out-going signal from a matrix.

output impedance

The impedance a device presents to its load. The impedance measured at the output terminals of a transducer with the load disconnected and all impressed driving forces taken as zero.

output return loss

See *return loss*.

output stage

In electronic equipment, the final stage that produces the finished output signal(s).

output to output isolation

The ratio of attenuation provided by the output stage to an interfering signal driving one output compared to a second output. The ratio is measured at the second output. A good specification protects output signals against incorrect cabling, such as accidental untermination or double termination.

outside broadcast

A remote broadcast, typically from a remote truck.

ovenized crystal oscillator (OXO)

A crystal oscillator that is surrounded by a temperature regulated heater (oven) to maintain a stable frequency in spite of external temperature variations.

over

1. In audio or video, a signal that is superimposed over a second signal. Also called voice over in audio.

2. In video switchers, a selection that determines which key layer appears on top of the other key layer in a mix/effects.

overscan

A video monitor condition in which the raster extends slightly beyond the physical edges of the CRT screen, cutting off the outer edges of the picture.

overshoot

The first maximum excursion of a pulse beyond the 100% level. That portion of a pulse that exceeds its defined level temporarily before settling to the correct level. Overshoot amplitude is expressed as a percentage of the defined level. See also *ringing*.

OXO

Ovenized crystal oscillator.

P

P32

32 Button-per-Source Control Panel.

P48

48 Button-per-Source Control Panel.

packing fraction

The area in a fiber optic fiber bundle occupied by the core material, expressed as a fraction of the total bundle area.

page

A named collection of virtual entities or functions of the same type and which can be displayed at one time on a control panel. The entries can be Source pages, Destination pages, Level pages, or Salvo pages. The number of entries (on the page) which can be displayed at one time is dictated by panel display capabilities. For example, the RPMB panel can display up to 8 Sources at a time whereas the SPD panel can display 16 Sources at a time. Pages can not be used on the R48 panel. Systems are limited to the total number of pages they can store. Pages can also be combined into page sets.

page set

A named set of pages used to define the pages provided to a control panel.

PAL

1. Phase Alternate Line. The name of the color television system in which the E'_V component of burst is inverted in phase from one line to the next in order to minimize hue errors that may occur in color transmission. PAL-B (also called PAL-I) is a European color TV system featuring 625 lines per frame, 50 fields per second, and a 4.43361875 MHz subcarrier. Used mainly in Europe, China, Malaysia, Australia, New Zealand, the Middle East, and parts of Africa. PAL-M is a Brazilian color TV system with phase alternation by line, but using 525 lines per frame, 60 fields per second, and a 3.57561149 MHz subcarrier.

2. Programmable Array Logic. An IC containing a large number of logic gates whose interconnections are programmable for specific applications.

PAL ID (PAL identification)

The control signal that indicates where the phase inversion of the E'V component takes place in PAL video signals.

PALplus

A transmission standard for 16:9 625 line signals.

panel

Routers: Sometimes called control panels, in the SMS7000 system these units interface between the router "brains," such as a router engine/ MCPU, via the actual matrix to interact with the routing system and its auxiliary components. In Encore systems these devices interface with the panel server which in turn communicates to the router engines for crosspoint changes. Panels often, but not always have some sort of display. Examples of Grass Valley Group panels:

BPS- Programmable Button-Per-Source
COS- Cubicle (Room) or Studio
EPD- 8 Destination Paging
MB8-Programmable Multibus 8
UMD series- Under Monitor Display series
(R)XY

panel configuration

See *configuration*.

panel group

See *group*.

panel prefix

A combination of printable ASCII characters assigned to the 16-button or 24-button keypads on control panels. Prefixes are up to 7 letters long and are used with suffixes to comprise a complete Source or Destination name. For example, if your Source name is VTR01, the first portion of the name, "VTR" is the prefix and is frequently used to identify the type of Source. The second portion of the example Source name, "01," is the suffix and is usually used to identify a specific entity among other similar ones - in this case, VTR Sources. Also see *keypad set*.

panel server

Encore: The application which manages the interface between control panels and the router controller within the Encore router system.

panel set

A named collection of panels of the same type. A panel may belong to more than one set. A set of panels is derived from the same panel template. A configuration change when applied to a panel set is simultaneously applied to all panels in the set.

panel suffix

A set of single printable numeric ASCII characters (0-9) assigned to 10 buttons of a control panel's 16-button or 24-button keypad. Preconfigured defaults exist for Telephone- and Calculator-style suffix sets on legacy SMS7000 control panels. For example, if your Source name is VTR01, the second portion of the example Source name, "01," is the suffix and is usually used to identify a specific entity among other similar ones - in this case, VTR Sources. "VTR," the first portion of the name, is the prefix and is frequently used to identify the type of Source.

panel template

Routers: A factory-defined default control panel configuration which cannot be changed by end users. Panel templates may include settings such as tally Level, Destinations, button assignments, and flags restricting or allowing certain actions. In SMS7000-based routers, completed templates are downloaded to specific control panels. In Encore-based routers, panel templates are downloaded to panels and become the starting point used to configure a real hardware or software panel. Once the user modifies and saves the template, it becomes a configuration. See *configuration* and/or template.

panel type

Routers: Describes the function of a panel and is represented by up to four characters. Panel function is defined by software in Encore or components and/or firmware in previous routing systems. A panel's physical appearance does not necessarily indicate its type. For example, the MB8 and COS appear identical, but are different panel types.

panorama

A digital effect that enhances a vanishing point effect by applying curvature to the parallel lines of video extending away from the viewer.

parallel cable

A multi-conductor cable carrying simultaneous transmission of digital data bits. Analogous to the rows of a marching band passing a review point.

parallel data

Transmission of data bits in groups along a collection of wires (called a bus). Analogous to the rows of a marching band passing a review point. A typical parallel bus may accommodate transmission of one 8-, 16-, or 32-bit byte at a time.

parallel digital

A digital video interface which uses twisted pair wiring and 25-pin D connectors to convey the bits of a digital video signal in parallel. There are various component and composite parallel digital video formats.

Parallel Digital Video

1. Passing multiple video data bits in parallel groups along a collection of wires (called a bus). High Definition parallel digital video (1080i and 720p) typically uses two parallel 10 bit buses (20 bits total) operating at 74.25 MHz. In comparison, Standard Definition parallel digital video employed within a device typically uses two 10 bit buses operating at 13.5 MHz.

2. For parallel interfaces between devices using multi-pair cables (now obsolescent) the two buses are combined for Standard Definition video into one 27 MHz interface (SMPTE 125M). The two buses remain separate for High Definition parallel interfaces using multi-pair cables (SMPTE 274M).

parallel video mixer

Video mixing architecture where two identical sets of multipliers are used to create a multilevel effect.

parallel video processing

A mixing architecture where the outputs of several video multipliers are summed to create a composite effect.

parity

A method of verifying the accuracy of transmitted or recorded data. An extra bit appended to an array of data as an accuracy check during transmission. Parity may be even or odd. For odd parity, if the number of 1's in the array is even, a 1 is added in the parity bit to make the total odd. For even parity, if the number of 1's in the array is odd, a 1 is added in the parity bit to make the total even. The receiving computer checks the parity bit and indicates a data error if the number of ones does not add up to the proper even or odd total.

patch panel

A manual method of routing signals using a panel of receptacles for Sources and Destinations and wire jumpers to interconnect them.

path length (propagation delay)

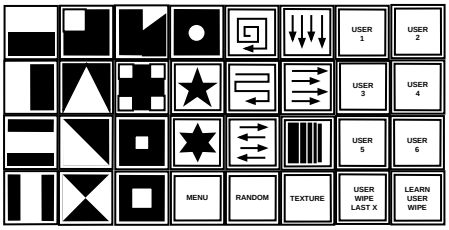
The time it takes for a signal to travel through a piece of equipment or a length of cable.

path

In digital picture manipulators, the values of the field rate information produced by in-betweening two key frames. Visually, the path corresponds to the motion route that the image on the screen takes to move from one key frame to the next. May also include size changes, picture rotation, etc.

pattern

In a production switcher, a variety of geometric shapes called patterns are available that can be used for wipe transitions, key masks, etc.



pattern border

A variable-width border that occurs at the edges of a wipe pattern. Typically, the border can be filled with matte video from a border matte generator.

pattern control

In production switchers, the group of controls used for selecting and modifying wipe patterns.

pattern limit

See *preset pattern*.

pattern mix

In video switchers, a special wipe edge modulation effect produced by summing a matrix pattern and an analog pattern together.

pattern modulation

An oscillation or modulation of the vertical and/or horizontal dimensions of a wipe pattern edge.

pattern positioning

In video switchers, moving a wipe pattern using a joystick.

pattern selector pushbuttons

In a production switcher, the pushbuttons used to select wipe patterns.

Pb

See *Y, Pb, Pr*.

PBX

Private branch exchange.

PCB (printed circuit board)

An insulating board onto which a circuit has been printed or etched.

PCN

Personal communications network.

PCS

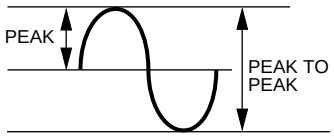
Personal communications service.

peak

The point of highest amplitude of a waveform or voltage.

peak-to-peak (p-p)

The amplitude (voltage) difference between the most positive and the most negative excursions (peaks) of an electrical signal.



pedestal

1. In the video waveform, the signal level corresponding to black. Also called setup.

2. A pulse (usually with a flat peak) that elevates the base level of another waveform.

PEGS

In GVG editing systems, a tool that provides for timed execution of programmed motion, E-MEM recall, GPI events, or character generator strings.

PERFORMER™

A GVG wideband 10 x 1 routing switcher.

peripheral bus

A serial communications bus between a master controlling device and peripheral or slave devices. The master sends out commands to remotely control the peripherals.

permission set

See *salvo permission set*, *salvo exclusion set*, and *exclusion or exclusion set*.

personality programming

Feature of some Grass Valley Group equipment that lets the user customize the default settings.

perspective

A digital picture manipulator effect that modifies an object's shape in order to create the illusion of disappearing points.

PEVL cable

A type of telecommunications cable.

PGM

Program. The on-air crosspoint bus of a video or audio switcher. The final on-air output signal of video or audio equipment.

phase (chroma phase, hue, tint)

The relative timing of a signal in relation to another signal. If the time for one cycle of a signal is represented as 360° along a time axis, the phase position for the second signal is called phase angle expressed in degrees. The subcarrier phase of TV colors can be adjusted and this changes the hue of the colors themselves.

phase distortion

A picture defect caused by unequal delay (phase shifting) of different frequency components within the signal as they pass through different impedance elements—filters, amplifiers, ionospheric variations, etc. The defect in the picture is "fringing" (like diffraction rings) at the edges where the contrast changes abruptly.

phase error

A picture defect caused by the incorrect relative timing of a signal in relation to another signal.

phase inversion

The condition whereby the output of a circuit produces a wave of the same shape and frequency but 180 degrees out of phase with the input.

phase lock

The phase of a signal follows exactly the phase of a reference signal.

phase locked loop (PLL)

A circuit containing an oscillator whose output phase or frequency locks onto and tracks the phase or frequency of a reference input signal. To produce the locked condition, the circuit detects any phase difference between the two signals and generates a correction voltage that is applied to the oscillator to adjust its phase or frequency.

phasing

Adjusting the delay of a video signal to match a reference video signal. This includes horizontal and subcarrier timing.

phase shift

The movement in relative timing of a signal in relation to another signal.

physical matrix

A software construct which enables the MCPU to address one or more discrete signal processing frames — or even a segment of a frame — as if they were one. The physical matrix defines the total Input/Output size of a like-signal type (i.e., video) matrix and may be sized from 16x16 to 1,024x1,024 in increments of 16. Physical matrices may be used to unite discrete frames in a large matrix or to fragment a single frame into smaller matrices. Every system must have at least one physical matrix and one controller *Slice*.

PIC

Primary interexchange carrier.

pick-off

Sample point of a signal.

pico

1×10^{-12}.

picofarad (pF)

1×10^{-12} farad.

PIN

Positive-intrinsic-negative. A type of semiconductor material used to build diodes with fast switching characteristics. See also *positive-intrinsic-negative photodiode coupler*.

pink signal (pink panther)

In telecommunications, a video test signal that produces pink when viewed on a monitor.

pixel

The smallest distinguishable and resolvable area in a video image. A single point on the screen. In digital video, a single sample of the luminance and color intensity values of a picture at a single point. Derived from the words picture element.

pixmark

In desktop editing, a single frame of video that serves as an icon to represent a particular video clip.

planes

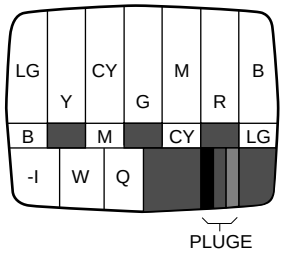
In video effects, levels of imagery contained in a composite effect.

PLD

Programmable logic device. An IC containing a large number of logic gates whose interconnections are programmable for specific applications.

PLUGE (black set)

Picture line-up generation equipment. Used for aligning monitors and other video devices. In some versions of color bars, PLUGE is the black set at the bottom of the red bar that contains bars that are blacker than black, black, and whiter than black. Used to adjust monitor brightness by watching the PLUGE so that the whiter than black bar is just visible and both the black and blacker than black bars are no longer distinct.



p.m.

Post meridiem.

POP

Point of presence.

port

A connection point between a computer and other hardware devices.

positioner

A joystick control that allows a wipe pattern or manipulated image to be moved and/or sized within the active picture area.

positioning a picture

See *location*.

photodiode coupler

A coupling device that enables the coupling of light energy from an optical fiber or cable onto the photosensitive surface of a positive-intrinsic-negative (PIN) diode of a photon detector at the receiving end of an optical-fiber data link.

posterize, posterization

A digital video effect where all possible colors are converted to a smaller number of colors, removing gradations and creating color steps to produce a poster effect.

post production

The editing process after the video footage has been shot. See *production house*.

postroll

To continue to roll videotape for some number of frames after the out-point during an edit preview. Useful in viewing how well the edit was performed.

post space

In some GVG digital picture manipulators, the two-dimensional space in which the X-axis translates the image left and right, the Y-axis moves the image up and down, and Z-axis controls the 2-dimensional image size.

potentiometer (pot)

A resistor that has a variable contact so that a portion of the potential applied between its ends may be selected.

POTS

Plain old telephone service.

pound (lb.)

Unit of measure of weight. One pound equals 0.453592370 kilogram.

p-p

peak-to-peak.

Pr

See *Y, Pb, Pr*.

PRBS

Pseudo-random bit stream. A telecommunications test signal.

preamplifier

An amplifier that raises the gain of a low-level signal so that it may be further processed without appreciable degradation in the signal-to-noise ratio.

pre-equalization (pre-emphasis)

To emphasize certain frequencies in a signal, usually before transmission, in order to improve the signal-to-noise ratio or to reduce distortion of the signal.

prefix

See *keypad set*

pre-lasing condition

The condition of an injection laser corresponding to the emission of predominantly incoherent or spontaneous radiation.

pre-plans

In telecommunications, a pre-stored list of connect commands that can be implemented by a single MML statement.

pre-regulator

A regulator used to deliver reduced voltage to all amplifier modules to ensure cooler operation.

preroll

A specific amount of time allowed for tape machines to run prior to an edit in order to get them up to speed and synchronized for the edit. In preparation for the edit, tapes are cued to a point ahead of the edit point to provide a proper preroll. The amount of preroll required varies with each type of VTR.

preselection

In video switchers, to make a crosspoint selection prior to performing a transition that will take the selection to air.

presentation switcher

Another term for "master control switcher" used in Europe and some other countries outside the U.S. There are minor differences applicable to the specific area of use.

preset

1. To select a video Source in preparation for taking it to air.

2. A Source selected on the preset bus or the action of selecting a Source on the preset bus.

preset background bus

A row of crosspoint buttons used to select the video input that will be placed on-air during the next background transition.

preset bus

In video and audio switchers, a row of crosspoint pushbuttons used to select the video or audio input that will be placed on-air during the next background transition. Also called preset background bus.

preset black

A transition mode in which one video signal is faded to color black before the other video signal is faded up.

preset pattern

An effect in which a wipe pattern that has been preset to a size limit by the user becomes the key source (cuts the key hole). The characteristics of the pattern are set using the pattern controls. If the preset pattern is wiped on-air, the wipe will move only to the imposed limit. If mixed on air, the pattern already at its imposed limit will fade into the picture.

preset wipe

See *preset pattern*.

Presto character generators

A series of affordable, high quality character generators made by Grass Valley Group.

preview

1. To rehearse an edit without recording it.

2. To look at a video effect before taking it to air.

preview bus

The crosspoint bus used for selecting the signal that will appear at the preview output of a switcher.

preview output (look ahead)

The output of the switcher that allows you to observe an effect before it is placed on-air.

PRI

Primary rate interface.

primary

Routers: When discussing TieLines, this term is used to identify the Level with the Source that you want to take.

primary colors

A small group of colors that, when combined, can produce a broad spectrum of other colors. In television, red, green, and blue are the primary colors from which all other colors in the picture are derived.

primary inputs

The main video inputs applied to the crosspoint buses of a switcher.

priority

In video mixers and manipulators, the position of a layer of video relative to other layers. Layer A is said to have priority over Layer B when Layer A is placed on top of Layer B. See also *layering*.

probabilistic, probability

Relating to, or governed by, probability. The behavior of a probabilistic system cannot be predicted exactly but the probability of certain behaviors is known. Such systems may be simulated using pseudo-random numbers. Evolutionary computation uses probabilistic processes to generate new (potential) solutions to a problem.

processing amplifier (proc amp)

A device that stabilizes the composite video signal, regenerates the synchronizing pulses and color burst, and can make other adjustments to the video signal.

production element

In desktop editing, the building blocks of a video production, including clips, effects, transitions, and graphics.

production house

Also known as post production house. A facility that typically does everything to generate final video productions except shooting of original videotape. Services typically include editing raw master tapes, modifying, creating new effects, and correcting. Projects typically include advertising, training, promotion, music videos, and television shows and movies.

production switcher

A device that allows transitions between different video pictures. It may also contain a special effects generator.

professional video

A video production market segment that includes educational, corporate, military, and small commercial producers of video programs.

program

1. The on-air crosspoint bus of a video or audio switcher.

2. The on-air output signal of video or audio equipment.

3. A sequence of instructions used to tell a computer how to receive, process, store, and transfer information.

program bus (program background bus)

In video and audio switchers, a row of crosspoint pushbuttons used to select the on-air video or audio background output of the switcher or mix/effects.

program monitor

A video monitor dedicated to displaying the program output of a device or studio.

program (PGM) output

The on-air or final output of a switcher or other device, or a studio.

program/preset mixer

A video mixing system that combines two crosspoint buses with a video mixer. On live production switchers, a program/preset mixer is usually included following the mix/effects and includes pushbuttons for selecting the output of each mix/effect.

program video

See *background video*.

programmable general purpose interface (GPI)

An interconnection scheme (usually serial) that allows remote control of certain selectable functions of a device by some other device that can be programmed to select the desired functions.

PROGRAMMED MOTION™

A trademarked GVG editor feature that allows control of VTR speed during editing.

progressive

Scanning every line of a video picture in sequential order to create a complete picture. Each complete scan is a frame.

PROM

Programmable Read Only Memory. A ROM that can be programmed by the equipment manufacturer (rather than the PROM manufacturer).

prompt

A cue to help the operator choose the next action.

Pronto Affiliate ID System

A Grass Valley Group system for playing network promos while keying effects, animations, and affiliate ID logos into the network signal under control of either the network or affiliate.

propagation delay (path length)

The time it takes for a signal to travel through a circuit, piece of equipment, or a length of cable.

Protect (PROT)

A control panel function that locks a Source-to-Destination configuration so that other control panels may not change that configuration.

protocol

A set of conventions governing the format and timing of message exchanges to control data movements and correct errors.

PROTOVRD

Protect Override.

P/S

Power supply.

PSC

Public Service Commission.

PST

Preset.

PST PTN

Preset pattern.

PUC

Public Utilities Commission

pulse

A change in voltage that has identifiable beginning and ending points. A momentary deviation from and return to a constant voltage level.

pulse count

A method of editing in which the system counts control track pulses to find locations on the tape.

pulse delay distribution amplifier

A device used to replicate an input timing signal, typically providing 6 outputs, each of which is identical to the input signal but shifted in time by as little as a few nanoseconds to as much as a microsecond or more.

pulse distribution amplifier

A device used to replicate an input timing signal, typically providing 6 outputs, each of which is identical to the input signal. May also perform cable equalization or pulse regeneration.

pulse drives

A set of signals needed by some Source equipment for timing purposes. The signal set may be composed of any of the following: sync, blanking, subcarrier, horizontal drive, vertical drive, burst flag, and burst gate/PAL pulse.

pulse edge

The leading or trailing edge of a pulse is defined as the 50% point of the pulse rise or fall.

pulse fall time

The interval of time required for the edge of a pulse to fall from 90% to 10% of its peak amplitude.

pulse level

The voltage amplitude of a pulse.

pulse regenerator

Device which accepts reference color black or another composite color video input and processes it to produce sync, blanking, subcarrier, and burst flag (PAL only) reference pulses.

pulse rise time

The interval of time required for the leading edge of a pulse to rise from 10% to 90% of its peak amplitude.

pulse spreading

The widening of the input optical signals as they traverse the length of a fiber. Caused by the fact that different frequencies of light traverse the path at different velocities. This property limits the useful bandwidth of the fiber. Usually expressed in nanoseconds per kilometer.

pulse to bar

A K-factor (distortion) measurement using a T pulse and bar video test signal. See also *T-pulse to bar*.

pulse width

The interval measured between the 50% amplitude points of the leading and trailing edges.

PVN

Private virtual network.

PVW

Preview.

PWR

Power. This is commonly found on the modules to identify the green power LED.

PXD

X-Y Destination Control Panel.

PXS

Programmable X-Y Source Control Panel.

PXY

Programmable X-Y. Used to identify a group of control panels consisting of a PXS, and one or more PXYE and PXD panels.

PXYE

Programmable X-Y Expansion Control Panel.

Q

Q

A designator used to name one of the color components of the NTSC composite video signal. The formula for deriving Q from red, green, and blue is .21R – .52G + .31B. The Q term also designates a color component of an M-Format component video signal.

quadrature

A 90° (one quarter cycle) phase difference between two signals.

Quad Split Generator

An option to GVG switchers that splits the screen into four sections, each section containing a different video source.

quantizing error

Inaccuracies in the digital representation of an analog signal. These errors occur because of limitations in the resolution of the digitizing process.

quantizing noise

The noise (deviation of a signal from its original or correct value) which results from the quantization process. In serial digital video, a granular type of noise that occurs only in the presence of a signal.

quantization

The process of sampling an analog waveform to convert its voltage levels into digital data.

quiescent current

See *idling current*.

R

rack

An equipment rack. In video, a standard equipment rack is 19 inches (48.26 cm) wide at the front. Most video equipment is designed to fit into a standard rack.

rack unit (RU)

Unit of measure of vertical space in an equipment rack. One rack unit is equal to 1.75 inches (4.45 cm). The height of a GVG electronics frame is typically specified in rack units.

RAM (random access memory)

A temporary, volatile memory into which data can be written or from which data can be read by specifying an address.

ramp

A video test signal that graduates from low luminance to high luminance used to measure luminance linearity.

RAS

Remote Access Service.

raster

1. A predetermined pattern of scanning the screen of a CRT.

2. The illuminated area produced by scanning lines on a CRT when no video is present.

rate conversion

1. The process of converting from one digital sample rate to another. The digital sample rate for the component digital video format is 13.5 MHz. For the composite digital video format it is either 14.3 MHz for NTSC or 17.7 MHz for PAL.

2. Often used incorrectly to indicate both resampling of digital rates and encoding/decoding.

RBOC

Regional Bell operating company.

read before write

A feature of some videotape recorders that plays back the video or audio signal off of tape before it reaches the record heads, sends the signal to an external device for modification, and then applies the modified signal to the record heads so that it can be re-recorded onto the tape in its original position.

real time

Computation or processing done in the present to control physical events occurring in the present. For example, when a digital effects system operator moves a joystick and the video images on the monitor appear to move simultaneously, the computations required to make the images move are said to have occurred in real time.

real-time multilayering

The ability to assemble several layers of video in real time. Some video switchers, such as the Kadenza system, allow several video layers to be viewed simultaneously in real time before a recording is made.

rear connector channel

See *backplane (rear connector channel, motherboard)*.

reboot (reset)

To restart a computer. See *boot up*.

rRecall

To restore a previous panel setup that has been learned using E-MEM.

reclocking

The process of clocking digital data with a regenerated clock to remove jitter.

recursion, recursive effects

Means to write again. A digital picture manipulation in which images are repeated on screen to create such effects as image trails, mosaics, and montages.

recursive loop

In digital picture manipulators, the part of the digital effects processor used to build recursive effects such as star trails, mosaics, montage effects, strobes, etc.

red field

A test signal in which the picture is filled with 75% or 100% red.

redundant power supply

Backup power supply which takes over immediately if the primary power supply fails.

re-entry (reentry)

In video switchers, the ability to select the output of a mix/effects level as the input to another mix/effects level or to the program/preset mixer.

reference

See *reference video signal*.

reference synchronizing generator

A sync pulse generator used as the main source of synchronizing signals. Other sync generators may be slaved (derive their signals) from the reference generator.

reference video signal

A composite video signal to which other signals are compared or locked for timing purposes.

refractive index

Relating to fiber optics, the ratio of the velocity of light in a vacuum to its velocity in a material, such as an optical fiber.

regen

regenerator.

regenerate

In video, to restore a pulse to its correct shape and level.

register

A memory storage location in an effects memory system.

relative humidity

Ratio of the quantity of water vapor in the atmosphere to the quantity which would cause saturation at the existing temperature.

relay

An electromechanical device having electrical contacts that open or close when current is applied to the activating mechanism of the device.

relay bypass

A video device that, in the event of a power failure, routes the video signal around the equipment that has lost power. GVG's 3240-206 Relay Bypass Module is an example.

relegendable buttons

Control buttons that are designed to allow the user to change their designations (the name on the button).

remote

1. Routers: Used during configuration to identify Sources and Destinations which are not physically connected to the router using the file being configured. These remote Sources and Destinations are controlled over a network.

2. A panel in another physical location.

3. Routers: Can refer to the perspective of the matrix controller. For example, a *TieLine* may be used between matrices to connect a "remote" Source to a "local" Destination.

remote Level

Routers: When discussing TieLines, this term is used to identify the Level with the Source that you want to take.

remote feeds

Electronic signal transmitted from a distant location.

remote truck, remote van

A mobile truck or van that houses a broadcast switching and control center for broadcasting news or sports.

repeater

1. A receiver/transmitter that receives a signal from another transmitter and relays (retransmits) it to another receiver or a receiver/transmitter.

2. In fiber optics, a device that converts a received optical signal to its electrical equivalent, reconstructs the source signal format, amplifies and reconverts it to an optical output signal. The purpose is to restore the light amplitude, compensating for normal loss in fiber.

reserved

Tieline status where a reservation is required to use a specified Tieline. See *first come first served (FCFS)*.

reset

To restore a device to its default or original state. To restore a counter or logic device to a known state, often a zero output.

resistive load

A load in which the voltage is in phase with the current.

resistor

A component made of a material (such as carbon) that has a specified resistance or opposition to the flow of electrical current.

resolution

Detail. In digital video and audio, the number of bits (four, eight, ten, etc.) determines the resolution of the digital signal. Four bits yields a resolution of 1 in 16. Eight bits yields a resolution of 1 in 256. Ten bits yields a resolution of 1 in 1024. Eight bits is the minimum acceptable for broadcast television.

resource group

A resource group is an association of machine control devices all within a single work area.

response

See *frequency response*.

responsivity

A measure of the sensitivity of a photosensor. The ratio of the output current or voltage to the input flux in watts or lumens. When responsivity is indicated at a particular wavelength (in amperes/watt), it denotes the spectral response of the device.

restorer

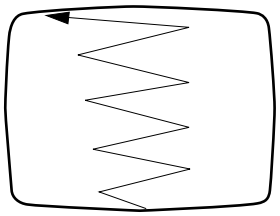
See *DC restoration*.

retiming

Adjustment of a local synchronizing generator that has been locked to a distant Source. This permits the local facility to use the distant Source in real-time production through a video switcher.

retrace

The return of the electron beam in a CRT to the starting point after scanning. During retrace, the beam is typically turned off. All of the sync information is placed in this "invisible" portion of the video signal. May refer to retrace after each horizontal line or after each vertical scan (field).



return loss

A measure of the accuracy of the impedance match between a signal source (such as a cable) and its terminating load. An unequal impedance match causes some of the power from the source to be reflected back to the source, resulting in signal distortion. The ratio of the signal voltage at the load to that voltage reflected back to the source is defined as the return loss. This ratio is generally expressed in decibels (dB).

RF

Radio frequency.

RFI

Radio frequency interference. Spurious electromagnetic energy that interferes with electronic equipment or broadcast signals.

RG-59

A coaxial cable type often used in television.

RGB (red, green,þ& blue; GBR)

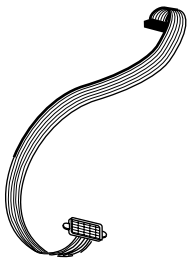
The three primary colors used in video processing, often referring to the three unencoded outputs of a color camera or VTR.

RHC

Regional holding company.

ribbon cable

Flat cable with individually-insulated multiple parallel conductors.



ringing

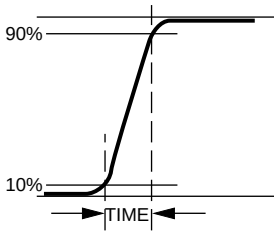
An oscillatory transient on a signal occurring as a result of band-width restrictions and/or phase distortions. A type of ringing causes ghosting in the video picture.

ripple

A feature of video editing systems that automatically adjusts the in and out edit points of all affected events in a show when an event is deleted, added or changed in length.

rise time

Time required for a pulse edge to rise from 10% to 90% of the final value.



r-mark

Record mark. This is a mark in the edit decision list indicating that the edit has already been recorded.

RMS

Root mean square. A measure of effective (as opposed to peak) voltage of an AC waveform. For a sine wave it is .707 times the peak voltage. For any periodic waveform, it is the square root of the average of the squares of the values through one cycle.

roll

1. To start playing a videotape.

2. To scroll credits or graphics vertically up or down the screen. Also called credit roll.

rolloff (slope)

A gradual decrease in signal voltage, usually associated with an increase in frequency.

ROM

Read only memory. A memory device that is programmed only once with a permanent program or data that cannot be erased.

room

A group of Destinations (usually a physical studio or control room within a facility) to which machine control and tally assignments can be made by an automated facility control system or the GUI Assignments menu. An assignment made to one Destination in a room allows control by any of the Destinations in that room.

rotation

In digital picture manipulators, to turn an image on one of its axes. In video switchers, to turn a wipe pattern around a point on the picture surface.

rough cut

In editing, a preliminary version of the edit decision list.

router, routing switcher

An electronic device that routes a user-supplied signal (audio, video, etc.) from any input to any user-selected output. Inputs are called Sources. Outputs are called Destinations.

RP

Rear Panel. RPs are special connector channels that support the various mezzanine boards. They are attached to the back of the stand-alone Control Frame according to which mezzanines are on the associated CIF module.

RSA

Rural service area.

RP-125

A SMPTE parallel component digital video standard. See *SMPTE 125M (was RP-125)*.

RS-170A

A document prepared by the Electronics Industries Association describing recommended practices for NTSC color television signals in the United States.

RS-232 or RS-232C

A serial data communications standard. RS-232C is a low-speed serial interface which uses a single-ended (unbalanced) interconnection scheme for serial data communications. Commonly used in telecommunications to connect computers and terminals to modems and other devices. The C suffix refers to the version of the RS-232 standard.

RS-250B

In telecommunications, a transmission specification for NTSC video and audio.

RS-422

A standard, balanced interconnection scheme for serial data communications.

RS-485

A high-speed serial interface connection between data communications equipment. RS-485 specifies the characteristics of a balanced (differential) multipoint transceiver/receiver interface.

RU

Rack unit.

ruler

A graphic element of a video editing application that shows time or timecode along a horizontal axis. Similar to the ruler in word processing applications except the units are times.

ruler-flat frequency response

The response of a system to a constant-amplitude function that varies in frequency is flat if the response remains within specified limits of amplitude, usually specified in decibels from a reference quantity.

run mode

In GVG video equipment, this mode permits an effect to be recalled and replayed, but not created or modified.

R-Y

A designator used to name one of the color signals (red minus luminance) of a color difference video signal. The formula for deriving R-Y from the red, green, and blue component video signals is .70R – .59G – .11B.

RZ

Return to zero. A data stream in which the logic level for a data 1 is a 1 during the time the data clock is high but returns to 0 during the time the data clock is low. For a data 0 the logic level is 0 for both high and low states of the data clock.

S

s

Second.

Sabre

A full-featured GVG video tape editing system that runs on the Silicon Graphics Indy™ workstation.

Safe title area (safe action area)

An area in the center of the television screen where it is considered safe to place a title key or other graphic so that none of it will get cut off at the outer edges by a TV receiver. The safe action area is slightly larger than the safe title area and is the area within which action should be confined so as to ensure that it will be visible on most television sets.

salvo (SVO)

1. The sending of a group of take commands at the same time.

2. A named, system-wide Pre-set that specifies Sources, Destinations, and Levels in advance and allows you to perform one or more Takes by executing a single Salvo. These Takes are executed sequentially (or in some cases in parallel) during vertical interval as a result of using a Salvo.

salvo elements

The individual Take commands (Source to Destination connections) which comprise a Salvo.

salvo exclusion set

This is the opposite of SMS 7000 logic where Salvos had to be listed to be available in a panel configuration. Now Salvos only have to be listed if they should not to be available from a panel. Global exclusions can be applied to the router engine (or MCPU), whereas set-/panel-specific exclusions can be applied only to Encore and newer control panels. See *exclusion or exclusion set*.

salvo pages

See *salvo (SVO)* or *page*.

salvo permission set

User-determined set of Salvos permitted to be controlled by a specific panel. If used, Salvo Permission Sets are included in a Panel Template before the template is downloaded to a particular control panel. A single Salvo Permission Set may be used by more than one panel template.

sample and hold

A circuit that takes a sample of an input voltage and holds or maintains that voltage at its output for a period of time.

sampling

Process by which an analog signal is measured, often millions of times per second for video, in order to convert the analog signal to digital.

sampling frequency

The number of discrete sample measurements made in a given period of time. Often expressed in megahertz for video.

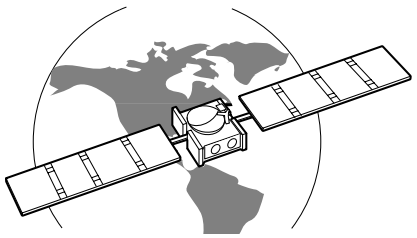
SAT

saturation (chroma, chroma gain).

satellite

1. An orbiting space vehicle containing a set of transponders that retransmit television broadcast signals back to earth receivers.

2. A TV station licensed to rebroadcast the programming of a parent station.



satellite auxiliary bus control panel

Relating to video switchers, a standalone auxiliary bus control panel.

satellite downlink

The communications path from a satellite to its ground station.

satellite uplink

The communications path from a ground station to its satellite.

saturation (chroma, chroma gain)

1. The intensity of the colors in the active picture. The voltage levels of the colors. The degree by which the eye perceives a color as departing from a gray or white scale of the same brightness. A 100% saturated color does not contain any white; adding white reduces saturation. In NTSC and PAL video signals, the color saturation at any particular instant in the picture is conveyed by the corresponding instantaneous amplitude of the active video subcarrier.

2. The point on the operational curve of an amplifier at which an increase in input amplitude will no longer result in an increase in amplitude at the output.

SAV

Start of active video. A synchronizing signal used in component digital video.

SC

Subcarrier.

SC/H phase (subcarrier to horizontal phase)

In NTSC video, the phase relationship of the subcarrier to the leading edge of horizontal sync. SC/H phase is correct when the zero crossing of subcarrier is aligned with the 50% point of the leading edge of sync. In PAL video, the SC/H phase is defined as the phase of the EU component of the color burst extrapolated to the half amplitude point of the leading edge of synchronizing pulse of line 1 of field 1.

SC/H phase error

An incorrect phase relationship of the subcarrier to the leading edge of horizontal sync.

SC/H phased (timed)

The time relationship of the subcarrier to (the leading edge of) horizontal sync is correct. See *SC/H phase (subcarrier to horizontal phase)*.

scan

One sweep of the target area in a camera tube or of the screen in a picture tube.

scatter

See *timing scatter*.

schematic

A diagram of the electrical scheme of a circuit with components represented by graphic symbols.

scope

Slang, short for oscilloscope (waveform monitor) or vectorscope, which are electronic devices used to display and measure the television signal.

SCP

Simple Control Panel.

SC phase stability

The equipment in question is able to maintain subcarrier phase with-in specifications.

scrambling

1. To transpose or invert digital data according to a prearranged scheme in order to break up the low-frequency patterns associated with serial digital signals.

2. The digital signal is shuffled to produce a better spectral distribution.

s-curve

1. An S-shaped frequency-response curve showing how the output of a frequency-modulation detector or circuit varies with frequency.

2. In GVG switchers and digital picture manipulators, a type of motion path between key frames where the graph of displacement versus time is shaped like an S; in other words, movement between key frames takes place at a variable speed.

SDP

Single Destination Paging control panel.

SDV

Serial Digital Video.

SECAM

Sequential couleur avec memoire (sequential color with memory). A color television system with 625 lines per frame and 50 fields per second developed by France and the U.S.S.R. Color difference information is transmitted sequentially on alternate lines as an FM signal.

secondary

Routers: When discussing TieLines this term is used to identify the Level with the Destination that you want to take the Source to.

seek event

An editor command that enables the user to search for and find a particular event in the edit decision list.

self key

An insert key effect in which the key video signal serves as both the key source and fill.

sequence

The ability of a memory system to link several learned effects together and replay them based on timing information provided by the operator.

sE-QUENCER™

A GVG trademarked E-MEM® function that enables E-MEM® registers to be recalled automatically in a pre-programmed sequence.

sequential assembly

In video editing, a sequential method of auto assembly. The computerized editing system records all edits listed in the edit decision list in order from first to last, requesting source tapes as they are need-ed. Also called A-mode assembly. See also *auto assembly*.

serial

Time-sequential transmission of data along a single wire. Analogous to a railroad train, where each car (data bit) follows the other in single file.

serial control panel

A control panel separate from the switcher (for example, a routing switcher) that communicates with the switcher via a serial connection.

serial digital

1. Digital information that is transmitted in serial form. Often used informally to refer to serial digital television signals.

2. Passing video data bits in serial form (one bit after another), along a single wire. High Definition serial digital (1080i and 720p as defined by SMPTE 292M) operates at 1.485 GBits/sec. (2 x 74.25 MHz x 10 bits). In comparison, Standard Definition serial digital video (SMPTE 259M) operates at 270 MBits/sec (2 x 13.5 MHz x 10 bits).

serial interface

1. A digital communications interface in which data is transmitted and received sequentially along a single wire or pair of wires. Common serial interface standards are RS232 and RS422.

2. Passing video data bits in serial form (one bit after another), along a single wire. High Definition serial digital (1080i and 720p as defined by SMPTE 292M) operates at 1.485 GBits/sec. (2 x 74.25 MHz x 10 bits). In comparison, Standard Definition serial digital video (SMPTE 259M) operates at 270 MBits/sec (2 x 13.5 MHz x 10 bits).

serializer

A device that converts parallel digital information to serial.

serial video processing

A video mixing architecture where a series of video multipliers, each combining two video signals, is cascaded or arranged in a serial fashion. The output of one multiplier feeds the input of the next, and so on, permitting effects to be built up, one on top of the other.

SERIM

Serial Interface Module.

serrations (vertical serrations)

A series of equally-spaced pulses within a pulse signal. For example, the vertical sync pulse is serrated in order to keep the horizontal sweep circuits locked during the vertical-sync-pulse interval.

set-in

An editor command meaning to enter an in-edit point.

set-in/set-out

A method of video editing using precise in and out point selection as opposed to on-the-fly editing.

set-out

An editor command meaning to enter an out-edit point.

setup (black reference, black level)

1. The specified base of the active picture signal which is at reference black level. Called setup because it is placed 7.5 IRE units above blanking (zero IRE) in NTSC video.

2. The basic operating configuration of a system.

shading

To adjust the contrast and color levels of a camera.

shadow key

A chroma key that retains the shadows cast by the foreground object.

shaft encoder

An digital electrical device similar to a potentiometer in function. The turns of a shaft, typically connected to a knob, are read and encoded into digital data.

shaping, shaped video

Shaped video is video that has already been multiplied by a key signal, usually resulting in a video shape that appears over a black matte. Typically, shaped video is the output of a character or graphics generator, together with a matching key signal. Both signals have “soft” anti-aliased edges. The two signals may be used in the keyer of a production switcher, where the key signal cuts a hole in the background and the shaped video fills the hole to create an anti-aliased key.

short time linear distortion

In video, an unwarranted change in amplitude or phase that occurs in a short time frame (0.1 to 1µs). The resulting TV picture will have dulled luminance transitions (fuzzy vertical lines) and color bleeding of areas adjacent to the vertical lines.

shot box

A box that mounts on a video camera and includes several buttons that activate various preset automatic zoom speeds and zoom positions.

shutter mask

See *box mask*.

shuttle

In videotape machines, a high-speed tape-running mode that permits fast cuing or rewinding of the tape.

SID

Source Identification panel.

signal

A waveform used to convey information from one point to another.

signal conditioning

The processing of a signal so as to make it compatible with a given device, including pulse shaping, pulse clipping, etc.

signal generator

A test oscillator that can be adjusted to provide a test signal at some desired frequency, voltage, modulation, and waveform.

signal processing

See *signal conditioning*.

signal to noise ratio (SNR, S/N)

Expressed in decibels, the signal to noise ratio relates how much stronger a signal is than the background noise.

Silhouette™

A GVG trademarked Borderline® generator for the Model 200 switcher that can create borders and shadows that are up to 8 lines wide and that can be moved using the joystick positioner.

Simple Network Management Protocol (SNMP)

An application layer protocol that allows remote management of networked devices. SNMP works by sending messages, called protocol data units (PDUs), to different parts of a network. SNMP-compliant devices, called agents, store data about themselves in Management Information Bases (MIBS) and return this data to the SNMP requestors. The Grass Valley Group product, Net Central, uses SNMP to acquire status information from network devices such as Modular, Routing, Production Switching, and Media Storage equipment. SNMP is the management protocol of choice for TCP/IP-based internets.

sine wave

A periodic wave in which the waveshape is proportional to the sine of the time variable.

single channel mode

In GVG digital picture manipulators, a mode in which the panel is delegated to only one channel.

single ended

An unbalanced circuit where one side of the circuit or transmission line is grounded. See also *balanced* and *unbalanced*.

single-mode fiber

An optical glass fiber that consists of a core of very small diameter (usually 2–10 microns) and a cladding approximately 20 times the thickness of the core. Such fibers are normally used only with laser sources because of their very small acceptance cone. Since the cone diameter approaches the wavelength of the source, only a single mode is propagated.

skew

1. A digital picture manipulator effect in which the picture is slanted along its horizontal or vertical axis.

2. Curve at the top of the picture resulting from improper VTR tape tension.

skewed key frame

In digital picture manipulators, the condition when a key frame in one channel does not line up with a key frame in another channel with respect to time.

skew ray

In fiber optics, a transmitted ray that never intersects the longitudinal axis of the fiber while being transmitted.

slave

Component in a system that does not act independently, but only under the control of another component.

slave port

Controlling port for subordinate equipment.

slave sync generator

A sync generator that receives a reference signal–typically color black or GVG's encoded subcarrier–from the master sync generator and produces all appropriate sync pulses. Slave generators normally feed each major area of the plant, such as videotape machines, cameras, switchers, etc.

slew rate

The maximum rate of change of the output voltage of an amplifier operated within its linear region.

Slice

A software construct which enables a single node controller for a Series 7000 to control up to four physical matrices. To do so, a Slice must be created for each *physical matrix*.

slide effect

A video effect in which a picture slides across the monitor from one screen position to another.

SLIP

Serial Line Internet Protocol. Used only in SMS-V64x64 Systems to communicate with the GUI.

slope

See *rolloff (slope)*.

S-MAC

A multiplexed analog component video standard proposed for studio intra-connection by the SMPTE working group on Component Analog Video Standards. The S-MAC system uses time compression and time domain multiplexing techniques to convey Y, Cr, Cb video signals.

SMDS

Switched multimegabit data service.

smear

A picture condition in which objects appear to be extended horizontally beyond their normal boundaries in a blurred or "smeared" manner.

smooth rolloff

See *rolloff (slope)*.

SMPTE

Society of Motion Picture and Television Engineers. A professional organization that sets standards for American television. An informal name for a color difference video format that uses a variation of the Y, R-Y, & B-Y signal set.

SMPTE 125M (was RP-125)

The SMPTE recommended practice for a bit parallel digital interface for component video signals. SMPTE 125M defines the parameters required to generate and distribute component video signals on a parallel interface.

SMPTE 244M

The SMPTE recommended practice for a bit parallel digital interface for composite video signals. SMPTE 244M defines the parameters required to generate and distribute composite video signals on a parallel interface.

SMPTE 259M

The SMPTE recommended practice for 525 line serial digital component and composite interfaces.

SMPTE time code

Time code that conforms to SMPTE standards. It consists of an eight-digit number specifying hours: minutes: seconds: frames. Each number identifies one frame on a videotape. SMPTE time code may be of either the drop-frame or non-drop frame type. In GVG editors, the SMPTE time code mode enables the editor to read either drop-frame or non-drop frame code from tape and perform calculations for either type (also called mixed time code).

SMS

Signal Management System.

SMT

Surface mount technology.

S/N

See *SNR*.

SNA

Systems network architecture.

snapshot

A frozen picture of the control settings of a production switcher or digital picture manipulator at a given point in time.

SNMP

See *Simple Network Management Protocol (SNMP)*/

snow

Video noise.

SNR

Signal-to-noise ratio. The SNR relates how much stronger a signal is than the background noise. Usually expressed in decibels (dB).

snubber

Electronic circuit that suppresses high frequencies.

soft black clip

Stops the luminance video going below a predetermined level.

soft border

A wipe pattern border that is mixed on the edges to give a graduated effect.

soft edge

A pattern edge between two video signals in which the signals are mixed together for a graduated transition effect.

soft panel, soft knobs, soft controls

A hardware control panel whose functions are defined by software and subject to change depending upon which menu selections the operator has made.

SOFTSET™

A Grass Valley Group software-controlled feature set that may include E-MEM registers, standard programming, general purpose interface programming, and service diagnostics.

soft white clip

Stops the luminance video from going above a predetermined level.

solarization

A digital picture manipulator effect in which the luminance levels are reversed, resulting in a picture that looks like a photographic negative.

SONET

Synchronous optical network standard. A telecommunications standard.

Source

1. Equipment that produces video, such as cameras, tape recorders, graphics and character generators.

2. In digital picture manipulators, the origin of picture information applied to the input of a digital effects processor. May consist of a video component and sometimes a key component.

3. Sources can be made up of one or more inputs on one or more Levels (i.e., a Source may consist of one input on the video Level and two inputs [left and right] on the audio Level). Two different Sources may share one or more inputs on one or more Levels. For example, if the Source **BARSTONE** (Bars, Tone) consists of a video and an audio input connected to a color bar generator, BarsSil (Bars, Silent) can use the same video input.

4. A Source is mapped to specific signal matrix inputs on one or more Levels. On each Level a Source may be associated with one or more inputs on multiple Signal Matrices.

Source or Source-Destination exclusion

This provides a means for limiting system access to specified Sources on a Destination by Destination basis. Also, it prevents the inadvertent transmission of material that might be inappropriate for a specified Destination. Source Exclusion is applicable to all Levels on which a specified Source appears. Multiple Sources shall be excluded for single or multiple Destinations. In the SMS7000 system the concept is that all Sources are excluded or None. In Encore one or more sources may be excluded from one or more destinations, thus providing more flexability. Global exclusions can be applied to the router engine (or MCPU), whereas set- or panel-specific exclusions can be applied only to Encore and newer control panels. See *exclusion or exclusion set*.

Source identification

A brief message, keyed into video, that defines the originator or point of origin of the signal. Often consists of call letters and city of origin.

Source pages

See *Source* and *page*.

source space

In digital picture manipulators, the axes of the video image on the monitor screen.

source synchronizing generator

A synchronizing pulse generator used to drive a specific piece of source equipment. It is referenced to a master reference synchronizing generator.

source terminated

A circuit whose output is already terminated for correct impedance matching with standard cable.

source timing module (STM)

Similar to a slave sync generator but occupies only a single module, typically for use in a distribution amplifier tray. Outputs a limited set of synchronization pulses that may be retimed relative to the locking master sync generator.

spectral bandwidth

In telecommunications, the spectral bandwidth for single peak devices is the difference between the wavelengths at which the radiant intensity is 50% (or 3dB) down from the maximum value.

SPG

See *synchronizing pulse generator (SPG)*.

spin

To rotate a video image.

spline

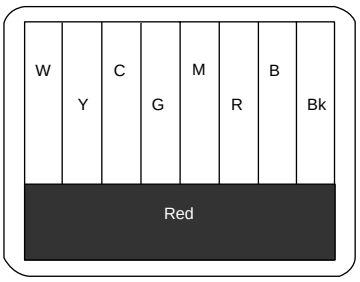
A curve shape produced on a computer or video device by connecting dots or points at various intervals along the curve. In digital picture manipulators, each key frame becomes a point on a curve and the user can control how straight or curved the path of the transformed image is as it travels through the key frame points.

split edit

An edit in which the audio in-edit point is different from the corresponding in-edit point of video or another audio channel.

split field

Horizontal, vertical, or diagonal þ images. Split field EBU bars are an example.



split key

A video switcher key mode in which one key bus button selects the hole cutter and a different key bus button selects the fill video. Also called key split or key breakaway.

split screen

A video effect in which two scenes are on screen at the same time, separated by a wipe pattern.

spotlight

A highlight effect produced by superimposing a full-strength video signal shaped by a wipe pattern over an attenuated (darkened) signal from the same video source.

spurious signal

Any portion of the signal that is not part of the fundamental video signal. Spurious signals include transients, noise, and hum.

square-wave

A square or rectangular-shaped periodic wave that alternately assumes two fixed values for equal lengths of time, the transition being negligible in comparison with the duration of each fixed value.

squeeze

A digital picture manipulator effect where the picture is compressed (made smaller).

squeeze an EDL

Compress an edit decision list.

SRC

Source. See *Source*.

s-shaping

Applying an s-shaped transfer function to a keyer to avoid high frequency keying artifacts.

SS

Secondary Switch. The Series 7000 uses SSs to expand inputs.

SSP

Service switching point.

Standard Definition Television (SDTV)

A digital television system with quality approximately equivalent to that of NTSC.

star trail

A trail effect in which random pixels turn off, creating a blinking or starry appearance.

station ID

The identification letters of a broadcast station.

status

1. The present condition of a device.

2. The current Source connected to a given Destination on a specific Level (usually the Tally Level); sometimes referred to as the on air signal

STB

Strobe.

steady-state

A condition in which circuit values remain essentially constant, occurring after all initial transients or fluctuating conditions have settled down.

step

A digital picture manipulator term meaning to advance a key frame effect one video frame or field at a time.

step index fiber

An optical fiber that has a core and a cladding with an abrupt change in the refraction index at the core-cladding interface. The index of the cladding is usually less than that of the core to permit total internal reflection.

still store

Device for storage of specific frames of video.

STM

Source timing module.

stripe

To record SMPTE time code onto a tape.

Streamline™

A GVG trademarked name for a soft panel and display.

STROPCHS

Store Operator Changes.

STS

Shared tenant services.

studio

A room designed for recording or broadcasting.

stylus

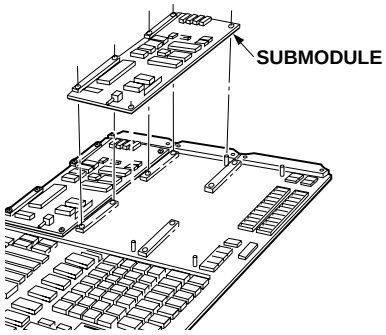
A small pointer used like a pencil for drawing on a video/ computer graphics system.

subcarrier (SC)

In NTSC or PAL video, a continuous sine wave of extremely accurate frequency which constitutes a portion of the video signal. The subcarrier is phase modulated to carry picture hue information and amplitude modulated to carry color saturation information. The NTSC subcarrier frequency is 3.579545 MHz, and the PAL-I frequency is 4.43361875 MHz. A sample of the subcarrier, called color burst, is included in the video signal during horizontal blanking. Color burst serves as a phase reference against which the modulated subcarrier is compared in order to decode the color information.

submodule

A small circuit board that mounts on a larger module. Also called a mezzanine.



subnet(work)

1. A collection of OSI end systems and intermediate systems under the control of a single administrative domain and utilizing a single network access protocol.

2. A division of a network into an interconnected, but independent, segment, or domain, in order to improve performance and security

subnet mask

See *address mask*.

substrate

The physical material upon which an electronic circuit is fabricated.

subsystem

A functional portion of a larger system.

suffix

See *panel suffix*.

super black

A luminance level between standard black and sync level. Super black is inserted into the background of a video signal to improve its utility as a source for luminance self keying. It is useful when the foreground of the signal contains some black, which would make a good-quality luminance key difficult to obtain.

Super Edit™

A trademarked name for the GVG editor software.

surface mount

A method of mounting subminiature integrated circuits and other components directly on the surface of a printed circuit board. Permits greater component density on boards, making the electronic equipment smaller.

SVO

See *salvo (SVO)*.

SVR

Server.

swap

1. A feature of some GVG switchers which enables the selections made on two mix/effects to be exchanged (selections on M/E 1 transfer to M/E 2 and vice versa).

2. An editor operation that exchanges functions (including machine assignments) of the record device and a source device. Useful in compositing.

SWC

Serving wire center.

sweep circuit

A generator that produces a periodic deflection of an electron beam on a CRT.

sweetening

Electronically improving the quality of an audio or video signal, such as by adding sound effects, laugh tracks, and captions.

switch

1. General term applied to an electronic or mechanical device that allows a connection to be established as necessary and terminated when there is no longer a session to support.

2. Network device that filters, forwards, and floods frames based on the destination address of each frame. The switch operates at the data link layer of the OSI model.

switcher (production switcher)

Device that allows selection of video sources. Also does transitions between sources and special effects.

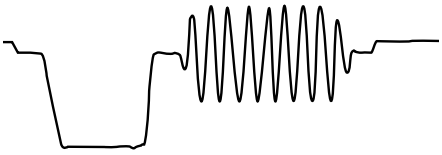
switcher channel

Hardware capable of processing one layer of video with all of the switcher channel features (wipes, keys, borderlines, and chroma keys, etc.).

sync

1. General term for a synchronizing signal or signal component. Digital systems generally employ an analog external timing reference signal (such as color black or tri-level sync) to synchronize different pieces of equipment. Within the digital signal itself, however, synchronizing information is carried by special digital codes inserted at the beginning and end of each active line.

2. In analog television systems, sync is the portion of the video signal which occurs during blanking and is used to synchronize the operation of cameras, monitors, and other equipment. Horizontal sync occurs within the blanking period in each horizontal scanning line, and vertical sync occurs within the vertical blanking period. A color black signal is often used for synchronizing different pieces of analog equipment.



sync add

A function of a video device that adds sync to the video signal. In component video, sync add is typically used when there is no sync on the green channel of an RGB signal.

sync generator

Device that generates synchronizing pulses needed by video source equipment to provide proper equipment or studio timing. Pulses typically produced by a sync generator include subcarrier, burst flag, sync, blanking, H & V drives, color frame identification, and color black.

sync processing

See *blanking processor*.

synchronizing pulse generator (SPG)

See *sync generator*.

synchronous

A transmission procedure by which the bit and character stream are slaved to accurately synchronized clocks, both at the receiving and sending end.

sync pulse

Timing pulses added to a video signal to keep the entire video process synchronized in time.

sync timebase error

See *time base error*.

sync tip

The furthest negative excursion level of the sync pulses.

sync word

A synchronizing bit pattern, differentiated from the normal data bit patterns, used to identify reference points in the digital television signal; also to facilitate word framing in a serial receiver.

System Controller

Another term for the MCPU.

system Source-Destination exclusion set

Global Source-to-Destination exclusions can be applied to the router engine (or MCPU). A second tier of Source-to-Destination exclusions can also be applied to control panels with Encore.

T

T1

In telecommunications, the paired cable used to transport DS1 service.

TAP

Test access port. In telecommunications, an MML command that allows any port on a digital switch to be used as a test port.

Take

1. Direct, immediate switching from one Source to another, occurring during the vertical interval for clean transitions.

2. The control panel operation which brings a preset Source or Sources to air.

tally

1. A lamp which lights to indicate that the associated video Source is in use. Typical locations of tally lamps are on the front of video cameras and in the crosspoint pushbuttons of video switchers.

2. The acknowledgment returned to the control panel or terminal that an operation has been executed.

3. A light which lights up to indicate that the associated button has been selected or to indicate that the associated input to the switcher is on-air.

tally Level, active

Initially set to the default tally Level, the active tally Level will tally if the default tally Level is not defined for the Destination assigned to a bus. In the UCP,MB8, and Client panels, the name(s) of this/these Level(s) appear(s) in the status display(s) at the start of the IDENT function.

tally Level, default

Set during Configuration, this Level is the default Level that will tally in panel displays if no other Level tally is activated by control panel operation. In the UCP, MB8, and Server panels, the name of this Level appears in the Preset display at the start of the IDENT function.

tally modules

Circuit modules, housed in Grass Valley Group MAX Series frames, which use opto-isolated inputs and relay closure outputs to facilitate visual or aural tally indicators within a facility. For example, when a Source machine is selected on a Destination, the returned tally could light a lamp to let the machine operator know that a machine was in use.

tally relay

A relay whose contacts close when an associated function is placed on-air. Tally relays are used in video switchers to provide the customer a way to light a camera tally lamp when the camera is placed on air at the switcher panel.

target space

In digital picture manipulators, the axes of the monitor screen.

TBC

Time base corrector.

TCB

Tension, continuity & bias.

TCI

Terminal Computer Interface.

TCP/IP

See *Transmission Control Protocol/Internet Protocol*.

TCXO

Temperature compensated crystal oscillator.

TD

Technical director. Switcher operator.

TDM

Time division multiplex. The management of multiple signals on one channel by alternately sending portions of each signal and assigning each portion to particular blocks of time.

tearing

A lateral displacement of the video lines due to sync instability. Visually it appears as though parts of the images have been torn away.

technical director

The operator of the video production switcher in a live broadcast.

telecine

A device for capturing movie film as a video signal.

teleconferencing

Electronically-linked meeting conducted among groups in separate geographic locations.

teleprompting

Text shown on a television monitor to assist a performer or speaker.

television

An electric transmission and reception of transient visual images, usually together with associated sound. Television generally involves the broadcast of information from one location to many locations.

template

Templates apply only to panels and are distinct from configurations. A template contains factory-defined default settings. It is, in a sense, “read-only” and can’t be changed, though the configurations derived from it can be changed. Panel templates may include settings such as tally Level, Destinations, button assignments, and flags restricting or allowing certain actions. In SMS7000-based routers, templates *are* user-changeable, and when completed, are downloaded to specific control panels. In Encore-based routers, panel templates are downloaded to panels and become the starting point used to configure a hardware or software panel. Once the user modifies and saves the template, it becomes a configuration. Also see *configuration*.

temporal aliasing

A defect in a video picture that occurs when the image being sampled moves too fast for the sampling rate. A common example occurs when the rapidly rotating spokes of a wagon’s wheels appear to rotate backwards because of video scanning that moves more slowly than the spokes.

TEN-XL/TEN-XLCV

A Grass Valley Group 10 x 1 compact video/audio routing switcher.

TEN-20™

A Grass Valley Group one rack unit router with 10 inputs and 20 outputs.

tension, continuity & bias

In key frame effects, the controls for moving an object along a path. Tension controls the length of the tension vector, continuity controls the angle of the path, and bias controls whether the path will be "pulled" towards the previous or the following key frame.

terminal block

An insulating base equipped with one or more terminal connectors.

terminal equipment

Equipment at an end of communication lines that send and/or receive certain signals for specific services. Some examples in television include sync pulse generators, processing amplifiers, and distribution amplifiers.

terminate, termination

To complete a circuit by connecting a resistive load to it. A video termination is typically a male BNC connector which contains a 75 ohm resistive load. When there are looping inputs, any unused looping input must be terminated in 75 ohms to ensure proper signal levels and to minimize reflections.

terminated

A transmission line ending in a resistance equal to the characteristic impedance of the line so that there are no reflections or standing waves.

test point

Typically a post in a circuit that can be monitored to test a parameter of the circuit.

test signal

An electronic signal with standard characteristics used to test the capability of circuits.

test signal generator

Device that generates special television signals used for aligning television equipment.

texture mapping

The ability of a digital picture manipulator to create textured surfaces that can be applied to shapes.

THD

See *total harmonic distortion (THD)*.

thick-film

A film pattern made by applying conductive and insulating materials to a ceramic substrate by a silk-screen process. Thick films can be used to form conductors, resistors, and capacitors.

threshold current

In telecommunications, the minimum forward current for which the laser is in a lasing state at a specified temperature.

throughput

A measure of efficiency of a system; the rate at which the system can handle work.

TieLine

1. A link from the output of one routing matrix to the input of another matrix.

2. A physical connection used to give a Destination connected to the output of one matrix access to Source equipment connected to the input of another matrix.

3. A signal which passes through two or more matrices; more specifically the path (consisting of one or more tie wires) which links a Destination of one matrix to a Source of another matrix. Tielines are established during system configuration.

TieLine type

1. A pattern of connections (Level Ties) between remote and local Levels. This Level or Levels will form the Begin and the End of a TieLine. For example: Levels A (Red), B (Blue), and C (Green) could be the Begin and Level D (Studio 5) could be the End. The same Level cannot be both a Begin Level and an End Level in a single TieLine type.

2. The level created to be assigned to one end of a TieLine. Each TieLine must have two TieLine types, one for each end.

tie wire

A physical cable which links the output of one matrix to the input of another matrix. One or more tie wires comprise a TieLine.

time base corrector

Device used to correct for time base errors and stabilize the timing of the video output from a tape machine.

time base error

Horizontal rate flutter of a video signal caused by tape stretch and inherent imperfections in the tape transport mechanism of a videotape recorder.

time code

1. Timing code laid down on videotape to give each frame a unique number so as to ensure exact transitions during editing.

2. In the M-2100, denotes cumulative and remaining time for the current program segment. This information is displayed on the control panel and sent to external connectors on the rear of the unit.

time delay

The time required for a signal to travel through a circuit.

timed

The devices or signals in question are synchronized with one another.

timeline

1. An effects control feature that enables the operator of a switcher or digital picture manipulator to pre-program a series of timed events, such as auto transitions, E-MEM recalls, and GPI triggers, and then replay them.

2. A window within a video editing application where clips and other production elements can be graphically arranged to create a fully edited production. The horizontal axis of the timeline window represents a timeline of the show.

time-multiplex

In the case of ITU-R BT.601-2 (CCIR-601), a technique for transmitting three signals at the same time on a group of parallel wires (parallel cable).

timing pulse

See *sync pulse*.

timing scatter

Routing switcher term describing varying electrical lengths.

title

A caption.

title inserter

See *title key*.

title key

A key effect which imposes a caption over a background scene. The source of the title key signal may be a character generator or a graphics camera.

TLYLVL

Tally Level.

TM

Tally Module.

toggle

To change back and forth between two states (for instance: on, off, on, off, etc.) by alternately opening and closing an electric circuit.

tone

Typically refers to a single-frequency audio signal used as a level setting reference.

total harmonic distortion (THD)

The ratio of the sum of the amplitudes of all signals harmonically related to the fundamental and the amplitude of the fundamental signal.

T-pulse

A sine-squared pulse used as an indication of frequency and phase response.

T-pulse to bar

A specification term relating to frequency response of video equipment. A video signal containing equal amplitude T-pulse and bar portions is passed through the equipment and the relative amplitudes of the T-pulse and bar are measured at the output. A loss of response is indicated when one portion of the signal is lower in amplitude than the other.

trace

In telecommunications, an MML command to trace designated ports.

TRACE™

A GVG trademarked editor program that reads the EDLs from several generations of edits to a show and constructs a final EDL with references back to the original source material. This ensures that the final show will be recorded from the original source material, ensuring against multigenerational degradation.

track

1. The section of a videotape where a particular signal is recorded. There are separate tracks for video, audio, time code, etc.

2. Levels in the timeline window of an editing application where video and audio elements can be placed to insert them into the production.

trail

A digital picture manipulator effect in which an image repeats on screen as it moves so that it appears to leave a trail of duplicate images behind it. If the trail is set to decay mode, the trailing images gradually fade away.

trailing edge

The transition of a pulse that occurs last, such as the high-to-low transition of a high clock pulse.

transcoder

A device that converts one form of encoded video to another, e.g., to convert NTSC video to PAL. Sometimes mistakenly used to mean translator.

transducer

A device that converts one form of energy into another. For example, in fiber optics, a device that converts light signals into electrical signals.

transform, transformation

In digital picture manipulators, to digitally change a picture in some way that alters the appearance or location of the picture, such as applying translation, rotation, perspective changes, size changes, aspect and skew manipulations, etc.

transformation path

In digital picture manipulators, the path or direction and speed that a transformed image follows as it moves from one key frame to the next.

transformer

An electrical device that inductively transfers electrical energy from one circuit to another circuit at the same frequency but usually at a different impedance, voltage, and current.

transient

A momentary surge on a signal or power line.

transistor

A semiconductor electronic device having three electrodes and used for signal buffering, amplification, etc.

transition

A change from one picture to another. A transition can be a wipe, mix, or cut.

transition interrupt

Selection of a new preset Source with a transition in progress. The switcher removes the old program video in time and remains (if necessary) in black/silent until a newly selected Source is ready and placed on-air.

transition status display

A patented GVG device that keys MASTER-21™ status into an external television monitor.

translate

1. In digital picture manipulators, movement of the image or screen along its X,Y, or Z axis.

2. Changing a video signal from one format to another.

translator

A device used to convert from one component set to another, e.g., to convert Y, R-Y, B-Y signals to RGB signals.

Transmission Control Protocol/Internet Protocol

The most common transport layer protocol used on Ethernet and the Internet. TCP is built on top of Internet Protocol (IP) and is nearly always seen in the combination TCP/IP (TCP over IP). It adds reliable communication, flow-control, multiplexing, and connection-oriented communication. It provides full-duplex, process-to-process connections.

transmitter

Equipment used to generate and amplify an RF carrier signal, modulate this carrier with information, and radiate the modulated RF carrier into space.

tray (frame)

The metal cabinet that holds circuit boards.

triaxial

A special form of coaxial cable containing three conductors.

trigger

A pulse that starts an action or function.

tri-level sync

An analog synchronizing signal used with HDTV, as defined in SMPTE 240M and 296M. Tri-level sync signals can be used to synchronize different pieces of HDTV equipment.

trim

1. To make a fine adjustment in a circuit or a circuit element.

2. In video editing systems, to add or subtract time code to adjust edit points.

Trompeter

Brand of connector. Also a brand of tool for plugging and unplugging BNC connectors.

trough

Also called cable trough. A slot underneath the flooring of a television facility where cables are laid for running from room to room.

TRS

Timing Reference Signals in composite digital systems (four words long).

TRS-ID

Timing reference signal identification. A four-word reference signal used to maintain timing in composite digital systems.

truncation

Deletion of lower significant bits on a digital system. Usually results in digital noise.

T-Span

A telephone circuit.

tumble

A transformation in which the picture appears to turn around its X (horizontal) axis. See also *flip*.

tuned-circuit equalizer

A circuit that is adjusted to be resonant at a particular frequency. Equalizer that employs circuits consisting of inductance and capacitance that can be adjusted for resonance at the desired frequency.

twisted pair

A cable composed of two small insulated conductors twisted together. Since both wires have nearly equal exposure to any interference, the differential noise is slight.

TWX

Teletypewriter exchange service.

TypeDeko™

A GVG broadcast quality character generator running under Windows NT on the DEC Alpha workstation.

U

U

One of the two color difference signals that modulate subcarrier in the PAL system. U corresponds to weighted B-Y, and V corresponds to weighted R-Y. The formula for deriving the U signal is .493(B-Y).

UART

Universal asynchronous receiver/transmitter. An integrated circuit that interfaces a microprocessor to a serial I/O port.

UCP

Universal Control Panel.

UMD

Under Monitor Display.

unbalanced

Frequently, a circuit having one side grounded. A circuit, the two sides of which are electrically different. See also *single ended* and *balanced*.

unconditional

In telecommunications, used with the MML switch commands. An unconditional command is implemented irrespective of previous connections made.

underscan

A video monitor condition in which the raster does not expand completely to the physical edges of the CRT screen, resulting in a black border around the edges of the screen. Some monitors can be set to underscan mode.

unit interval

In telecommunications, the time duration for one bit period at a specified data transmission rate. The basic unit for measuring jitter.

unity gain

An amplifier or active circuit in which the output amplitude is the same as the input amplitude.

unity key frame

In digital picture manipulators, a part of memory used to retain user-defined values for parameters such as background color, border ON/OFF, key frame duration, etc.

unity picture

In digital picture manipulators, a picture in which all of the key frame parameters that define the picture are at their default values.

unity source memory

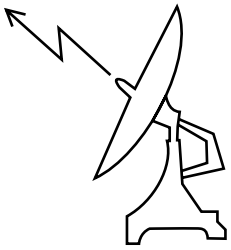
In digital picture manipulators, memory used to retain user-defined settings of source-related parameters for each source, similar to unity key frame.

unterminated

Not terminated.

uplink

The earth station that transmits signals to a satellite for relay to another location on the ground.



upstream

1. Placed ahead of other devices in a video signal path.

2. Describes the location of keyers in a mix/effects level or in the overall switcher architecture.

3. Relates to the priority of the video signals as they are combined through the video production switcher.

4. Routers: When discussing TieLines, this term is used to identify the Level with the Source that you want to take.

V

V

1. Vertical. See *vertical interval*.

2. One of the two color difference signals that modulate subcarrier in the PAL system. V corresponds to weighted R-Y, and U corresponds to weighted B-Y. The V component of subcarrier is reversed in phase on alternate lines. The formula for the V signal is .877 (R-Y).

V1

A signal that identifies the first field of the four field color sequence for NTSC or the eight field color sequence for PAL (see *color field*). Also called CFID (color field ID).

VA

Volt-ampere. Volts times amperes.

VAN

Value-added network.

V and U

PAL color difference signals.

V axis switch

In PAL television, a 180° phase shift at line rate of the V color component relative to subcarrier. See also *PAL ID (PAL identification)*.

V blanking width

Refers to the width in terms of time or horizontal lines of the television blanking signals that occur during the vertical retrace interval.

VCR

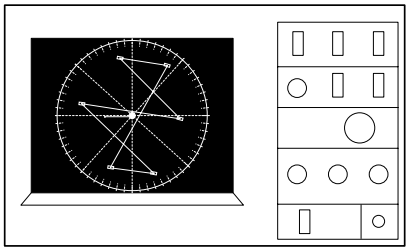
Video cassette recorder.

VCXO

Voltage controlled crystal oscillator.

vectorscope

A trademarked name that has become the generic description for a vector display unit which allows visual checking of the phase and amplitude of the color components of a video signal.



vernier control

Fine adjustment control.

vernier trim

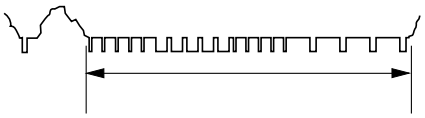
See *vernier control*.

vertical drive

Synchronizing pulse that occurs at the leading edge of vertical blanking. Used in older systems to indicate the start of vertical retrace.

vertical interval

The portion of the video signal that occurs between the end of one field and the beginning of the next. During this time, the electron beams in the cameras and monitors are turned off (invisible) so that they can return from the bottom of the screen to the top to begin another scan.



vertical interval data

Relating to video switchers and other similar devices, vertical interval data is internal system control data that is updated and distributed during each vertical interval.

vertical period

In video, the time required for one vertical scan cycle. In NTSC, this is 1/59.94 second, in PAL, 1/50 second.

vertical resolution

Chrominance and luminance detail expressed vertically in the picture tube. Limited by the number of scan lines.

vertical retrace

The return of the electron beam from the bottom to the top of the raster after completion of each field.

vertical serrations

A vertical synchronizing pulse contains a number of small notches called vertical serrations. These serrations provide horizontal synchronization during the vertical interval.

vertical sync pulse

The synchronizing pulse at the end of each field which signals the start of vertical retrace.

VI

See *vertical interval*.

video

1. An electrical signal that carries television picture information.

2. An electric signal that carries transient visual images. Video generally involves the movement of visual information from a single Source location to a single Destination, or to a small number of Destinations. Many different types of analog and digital video signals exist.

video crosspoint module

In video switchers, a circuit board containing video switching crosspoints.

videoDesigner Desktop Graphics

A Grass Valley Group graphics system designed for the MS-DOS PC.

video distribution amplifier (DA)

See *distribution amplifier (DA)*.

video fill

A video signal from a primary input or external input used to fill the hole made by a key signal.

video gain (white level, white bar, reference white)

The range of light-to-dark values of the image which are proportional to the voltage difference between the black and white voltage levels of the video signal. Expressed on the waveform monitor by the voltage level of the whitest whites in the active picture signal. Video gain is related to the contrast of the video image.

video mixer

European term for video production switcher.

video monitor

A high-quality television set (without RF circuits) that accepts video baseband inputs directly from a TV camera, videotape recorder, etc.

video path

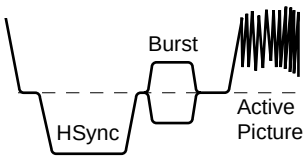
The electronic path within the device that routes and processes the video signals. Video path length refers to the amount of time required for a signal to travel from input to output.

video processing amplifier

A device that stabilizes the composite video signal, regenerates the synchronizing signals, and allows other adjustments to the video signal parameters.

video signal

An electrical signal that includes all of the information present in the television picture together with the necessary synchronizing signals.



Video Signal

video switcher (production switcher, video mixer)

Device that accepts inputs from a variety of video sources and allows the operator to select a particular source to be sent to the switcher's output(s). May also include circuits for video mixing, wiping, keying, and other special effects.

videotape recorder (video tape recorder, VTR)

A device which permits audio and video signals to be recorded on magnetic tape.

video to audio crosstalk

A measurement, typically in dB, of the amount of unwanted video signal energy present in an audio signal.

video track

The track or area on a videotape where video information is recorded.

viewer

In desktop video editing, a window that allows playing of video clips, albums, and timelines.

VIR

Vertical interval reference. Reference signal inserted into the vertical interval of source video. This signal is used further down the video chain to verify parameters and to automatically adjust gains and phase.

Virtual Local Area Network (VLAN)

A group of devices on one or more LANs that are configured (using management software) so that they can communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments. Because VLANs are based on logical instead of physical connections, they are extremely flexible.

virtual matrix

Software construct which divides a single physical routing matrix into several smaller routing matrices. Only Destinations assigned to a virtual matrix can access the Sources assigned to that virtual matrix.

vision mixer

European term for video production switcher.

VITC

Vertical interval time code. Time code encoded into the vertical interval of the video. It usually can be read out even when a VTR is still-framed or running at slower or faster than play speed.

VITS (vertical interval test signal)

A signal that may be included during the vertical blanking interval to permit on-the-air testing of video circuit functions and adjustments.

VLAN

See *Virtual Local Area Network (VLAN)*.

VMS

Voice messaging services.

voltage regulator

A circuit used for controlling and maintaining a voltage at a constant level.

VPN

Virtual Private Network.

VSD

Video status display.

VTR

Videotape recorder.

VU meter

Volume-unit meter, a type of meter used to indicate average audio amplitude.

W

W

Watt.

WAN

See *Wide Area Network (WAN)*.

WARC

World Administrative Radio Conference.

warm start

to reboot a system without turning power off.

wash

See *background wash*.

watt (W)

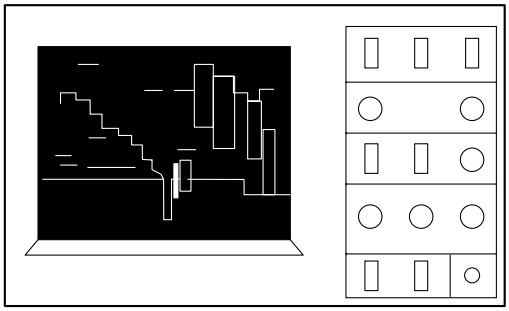
A measure of electrical power. The power expended when 1 ampere of direct current flows through a resistance of 1 ohm. The unit of electric power required to do work at the rate of 1 joule per second. Calculated by multiplying volts times amperes.

waveform

The shape of an electromagnetic wave. A graphical representation of voltage or current in relation to time.

waveform monitor

A device used to examine the video signal and synchronizing pulses. An oscilloscope designed especially for viewing the waveform of a video signal.



waveguide

A system of material designed to direct confined electromagnetic waves in a direction determined by its physical boundaries.

wavelength division multiplexing (WDM)

In telecommunications, a means of increasing the information-carrying capacity of an optical fiber by simultaneously transmitting different wavelengths.

wavelength of peak radiant intensity

In telecommunications, the wavelength at which the spectral distribution of radiant intensity is at maximum.

Wavelink®

GVG system for short-haul fiber optic transmission of video, audio, and data.

weighted

Correction factor applied.

WF Monitor

See *waveform monitor*.

white bar (white level, reference white)

See *video gain (white level, white bar, reference white)*.

white balance

See *color balance*.

white clipper

A circuit that clips off any signal above a specified video level.

white level (white bar, reference white)

See *video gain (white level, white bar, reference white)*.

white peak

The maximum excursion of the video signal in the white direction at the time of observation.

Wide Area Network (WAN)

A data communications network that serves users across a broad geographic area and often uses transmission devices provided by common carriers. Frame Relay, SMDS, and X.25 are examples of WANs. Compare with *Local Area Network (LAN)* and MAN.

wide bandwidth

Capable of passing a broad range of frequencies.

wideband

See *wide bandwidth*.

window

1. Video containing information or allowing information entry, keyed into the video monitor output for viewing on the monitor CRT. A window dub is a copy of a videotape with time code numbers keyed into the picture.

2. A video test signal consisting of a pulse and bar. When viewed on a monitor, the window signal produces a large white square in the center of the picture.

3. A graphical user interface that presents icons and tools for manipulating a software application. Most applications have multiple windows that serve different purposes.

wipe

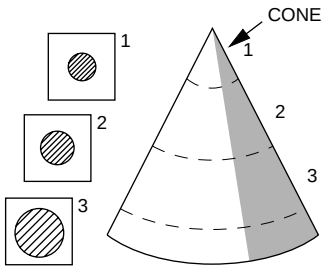
A transition between two video signals that takes the shape of a geometric pattern.

wipe generator

An electronic device that produces video wipe transition control signals. May be a standalone device or part of a production switcher.

wipe solid

A wipe pattern control signal whose voltage mathematically represents a three-dimensional geometric shape. The shape of the wipe solid varies depending on the wipe pattern being generated. For example, a circle pattern is generated from a cone-shaped wipe solid.



woof

A verbal signal between engineers meaning to "stop adjusting."

word

See *byte*.

work print

A videotape which is created as a reult of an off-line editing session.

working buffer

In digital picture manipulators, the memory space where a copy of the current key frame effect is held so that the user can modify it.

working key frame

The key frame under construction.

working register

The memory location in which an effect under construction is stored.

wow and flutter

Wow refers to low-frequency variations in pitch while flutter refers to high-frequency variations in pitch caused by variations in the tape-to-head speed of a tape machine.

WYSIWYG

What you see is what you get. The final product looks exactly like what you see on a monitor.

X

X-axis

The horizontal axis in a system of multidimensional coordinates. See *axis*.

XEDL™

An optional GVG editor program for edit list translation and serial input/output.

XFMR

transformer.

XGPI

External General Purpose Interface.

XMTR

Transmitter.

XPT

Crosspoint.

XTALK

Crosstalk.

X-Y

In routing switchers, refers to a switching matrix model that places inputs (Sources) on an X axis and outputs (Destinations) on a Y axis. Routing connections are made by specifying an X value (input number) to be connected to a Y value (output number). Using this scheme, any available Source can be connected to any available output.

X-Y panel

A routing switcher control panel that uses the X-Y model for making crosspoint selections.

Y

Y (luminance)

1. The luminance (brightness) portion of a video signal, especially component video. The formula for deriving Y from the red, green, and blue signals is .30R + .59G + .11B.

2. Abbreviation for admittance, which is the reciprocal of impedance, the ease with which alternating current flows through a circuit.

Y, Cr, Cb

Color difference signal designation used for various purposes, such as the CCIR/SMPTE standard digital component video signal set (CCIR601, RP-125). Y corresponds to luminance, Cr corresponds to the R-Y signal, and Cb corresponds to the B-Y signal.

yellow signal

In telecommunications, a signal sent back in the direction of a failure, indicating that the input of a network element has failed. The yellow signal varies with the DS framing used.

Y, Pb, Pr

Color difference signal designation. Y corresponds to the luminance signal, Pb corresponds to the scaled B-Y color difference signal, and Pr corresponds to the scaled R-Y color difference signal.

Y, R-Y, B-Y

Color difference signal designation. Y corresponds to the luminance signal, R-Y corresponds to the red minus luminance signal, and B-Y corresponds to the blue minus luminance signal. These signals are derived as follows:
Y = 0.3Red + .59Green + .11Blue
R-Y = 0.7Red - 0.59Green - 0.11Blue
B-Y = 0.89Blue - 0.59 Green -0.3Red

Y to C delay

Relative delay or timing of the luminance channel compared to the chrominance channel in a video system.

Y, U, V

PAL luminance & color difference components. U and V are the names of the B-Y and R-Y color difference signals (respectively) when they are modulated onto subcarrier.

Y-axis

The vertical axis in a system of multi-dimensional coordinates. See *axis*.

Y/C delay

See *Y/C delay*.

YIQ

NTSC and M-Format luminance and color difference components.

Z

Z

impedance.

Z-axis

The Z axis is in the third dimension, perpendicular to the X and Y axes and indicates depth. See *axis*.

zero dispersion point

In telecommunications, the wavelength where material dispersion is minimal. With standard fiber optic cable, that wavelength is 1310 nanometers.

zero suppression

In telecommunications, techniques that limit the number of consecutive data 0's that may be transmitted. For DS1 without B8ZS, fifteen data 0's are the maximum allowed.

zero timing point

The point at which all the video signals must be in synchronization (typically the switcher input).

zero-crossing of subcarrier

The zero voltage point of subcarrier (the point where the waveform passes through zero volts).