

A

A.L.C. (Automatic Level Control)

On AI lenses, also known as the peak/average control. Adjusting this control allows the auto iris circuitry to either take bright spots more into consideration (peak), bringing out detail in bright areas, or less into consideration (average) bringing out

Activity Detection

A feature of the Generation 3 video multiplexer range that uses video motion detection techniques to improve the camera update times. It also gives a relay closure.

Alarming

The ability of CCTV equipment to respond to an input signal, normally a simple switch closure. The response varies depending on equipment type, most common is for switcher to 'hold' on the camera corresponding to the alarm input.

Analog

A signal in which any level is represented by a directly proportional voltage; not digital.

Angle Of View

The maximum scene angle that can be seen through a lens.

Aperture

The lens opening that controls the amount of light reaching the pickup device (imager).

Aspect Ratio

The ratio of the picture frame width to the picture frame height in standard TV systems. It is 4 units horizontal over 3 units vertical.

Aspherical Lens

A lens designed with a non spherical shape so that it refracts the light passing through it to either lower the lens aperture so that it passes more light or decreases barrel distortion on wide angle lenses.

Attenuation

A decrease or loss in a signal. Reduction of signal magnitude (loss) normally measured in decibels.

Auto White Balance

Feature on color cameras whereby the camera constantly monitors the light and adjusts its color to maintain white areas.

Automatic Frequency Control (AFC)

An electronic circuit used whereby the frequency of an oscillator is automatically maintained within specified limits.

Automatic Gain Control (AGC)

An electronic circuit used by which the gain of a signal is automatically adjusted as a function of its input or other specified parameter.

Automatic Iris Lens

A lens in which the aperture automatically opens or closes to maintain proper light levels on the camera's pickup device.

Auto-Terminating

Feature whereby the equipment automatically selects the correct termination depending on whether the video output BNC is connected.

B

B.L.C. (Back Light Compensation)

A feature of modern CCD cameras which electronically compensates for high background lighting to give detail which would normally be silhouetted.

Back Focus

The mechanical aligning of the imaging device with the focal point of the lens. Most important on zoom lenses to ensure the image stays in focus throughout the zoom range.

Balanced Signal

Method of transmitting video, usually over twisted pair cable, that consists of two equal but opposite signals being sent down two conductors.

Band Width

The frequency range of a signal. The span that the information-bearing signal occupies or requires or the difference between the lowest and highest frequency of a band.

Base-Band Video

Unmodulated video signal suitable for display on a monitor but not a domestic TV.

Black Level

The level of the video signal that corresponds to the maximum limits of the black areas of the picture.

Blanking (Field And Line Flyback Blanking)

The operation of turning off the monitor display, or pick-up device, during sync pulses to avoid thin white lines appearing on the picture.

Blooming

The halation and defocusing effect that occurs around the bright areas of the picture (highlight) whenever there is an increase in the brightness intensity.

BNC

Video connector, the most commonly used in CCTV.

Bridging

A term indicating that a high impedance video line is paralleled, usually through a switch, to a source of video. A separate overall video output.

C

C Mount / CS Mount

The two industry standards for mounting a lens on a camera. The C-Mount lens has a 17.5mm flange back distance. The CS-Mount lens has a 12.5mm flange back distance.

C.C.I.R.

The European TV standard 625 lines 50 fields.

Camera

A device that translates light into a video image and transmits that image to a monitor for viewing. It contains the image sensor and other electronic circuitry to create a video signal.

Cathode Ray Tube (CRT)

The picture tube in a video monitor that can reproduce the picture image seen by the camera.

CATV

Short for Cable Access Television. The method for distributing RF signals via coaxial cable rather than radiated through the air.

CCD

Charged Coupled Device. This is a solid state semiconductor imaging device often referred to as an integrated circuit, chip or "imager." Solid state cameras are sometimes referred to as CCD cameras.

CCTV

The common abbreviation for Closed Circuit Television. A private or closed television system.

CD-RW

A CD-ROM that can be written, erased, and rewritten by a CD-RW drive.

Chrominance (C)

The part of the video signal corresponding to the color information.

Coaxial Cable

A type of shielded cable capable of carrying a wide range of frequencies with very low signal loss.

Composite Video

The complete video signal consisting of the video information, the sync pulse and threshold reference signal.

Contrast

The range of light and dark values in a picture or the ratio between the maximum and the minimum brightness values.

Crosstalk

An undesired signal that interferes with the desired signal.

D

Db (Decibel)

A measure of the power ratio of two signals. It is equal to ten times the logarithm of the ratio of the two the iris.

DC Type Lens

An auto-iris lens with internal circuit which receives voltage and a video signal from the camera to adjust signals.

Depth Of Field

The area in focus in front of and behind the subject.

Digital

A signal that levels are represented by binary numbers. These can be kept in a store.

Digital Recording

This is the latest form of recording and is relatively new to the CCTV industry as a result is not the most economical method however it does have several advantages over the VCR analogue tape recorders. First of all it enables quick access to the desired

Distribution Amplifier

A device that accepts a video signal and sends it out over a number of independent outputs.

Duplex (Multiplexer)

A multiplexer with two frame stores allowing it to show multi-screen pictures while performing time multiplex recording.

Dwell Time

The length of time a switcher displays one camera before sequencing to the next. Usually a variable setting.

Dynamic IP Address

A Dynamic IP address is a type of account from an ISP (internet service provider) where your computer or network is assigned an IP address that constantly changing and never remains the same. Also see IP Address and Static IP.

E

E.I. (Electronic Iris) Shutter

Electronic Iris shuttering is the ability of the camera to compensate for moderate light changes in indoor applications without the use of auto iris lenses.

E.I.A. (Electronic Industry Association)

US TV standard 525 lines 60 fields.

Equalization

The process of correcting losses of certain components in a signal.

Ext. Sync (External Sync)

The ability of CCTV equipment, normally cameras, to accept one or more of the standard sync formats so as to align itself to the rest of the system.

F

Facial Capture

Corner mounted cameras are very effective at capturing overview scene surveillance. In order to obtain facial capture surveillance for positive identification purposes, cameras should be mounted at vertical height conducive for facial capture (for example, in light switches). Lenses selected should produce identification level imaging, ie no less than 120% vertical image of the person.

Fiber Optic

The process of transmitting light through a long, flexible fiber such as glass or plastic, for the purpose of transmitting video, audio, or data over long distances.

Field

One half of a frame of video (262.5 scan lines).

Field Of View

The maximum viewed image (area covered) a lens "sees." The horizontal or vertical scene size at a given distance from the camera.

Flange Back

The distance from the flange of the lens (beginning of the lens mount) to the focal plane. C-mount lenses have a flange back distance of 17.526mm vs. 12.5mm for CS-mount.

Focal Length

The distance (in millimeters) from the lens to the surface of the image sensor. The shorter the distance, the wider the view; the longer the distance, the narrower (telephoto) the view.

Focus

The focal point. An adjustment to the lens optics to improve the clarity of the picture.

Foot Candle (FC)

A measurement of light. 1 lumen per square foot.

Format

The size of the camera's pickup device (imager). Current standard formats are 1/4", 1/3" and 1/2".

Frame

A complete picture (525 scan lines). The frame consists of two fields of video information.

F-Stop

A term used to indicate the speed of a lens. The smaller the f-number, the greater is the amount of light passing through the lens.

G

Gen. Lock (See Ext. Sync)

To synchronize one piece of equipment to the sync pulses of another.

Ghost

A shadowy or weak image in the received picture, offset to either the right or to the left of the primary image.

Gigabyte (GB)

1,024 megabytes or 1 billion characters of information. Also see Megabyte.

Gray Scale

The number of variations from white to gray to black.

Ground

An electrical connection point that is common to either a metal chassis, a terminal, or a ground bus.

Ground Loop

Effects video pictures in the form of a black shadow bar across the screen or as tearing in the top corner of a picture. Caused by different earth potentials in a system.

H

Hardwired

Method of controlling camera points using multi-core cable.

Horizontal Resolution

The maximum number of individual picture elements that can be distinguished in a single scanning line.

Hz (Hertz)

Cycles per second.

I

I.R. (Infra Red)

A range of frequencies lower than visible red light used for covert surveillance or as a low cost wireless video link.

I.S.D.N. (Integrated Services Digital Network)

Digital phone lines from which allow transmission of video signals via fastscan at speeds of 128Kb/second; used with terminal adapters.

Image Burn (Retained Image)

A change produced in or on the target of the pickup device which remains after the removal of a previously stationary light image.

Image Device (Imager)

The detector in the camera, either a tube or a CCD solid state device.

Impedance

The effective resistance of an electronic circuit to an A.C. signal.

Infrared Illumination

When a “low-light” is subject to dark conditions, active infrared illumination must be applied for best results. Active infrared illumination is a new surveillance technology that is so effective that the images produced are often mistaken for regular daytime monochrome images. Active infrared illumination is a cost-effective technology for enabling truly effective 24/7 surveillance in any lighting conditions including total darkness.

Insertion Loss

The signal strength loss that occurs when a piece of equipment is inserted into a line.

Intensifier

An electronic device that creates an output image brighter than the input (original) image. Optical amplifier.

Interlace

A scanning process where every other horizontal line is scanned in one field while the alternate lines are scanned in the next field to produce a complete picture frame.

Internal Sync (Crystal Controlled)

A camera that generates its sync pulses without reference to any other source. Normally using a crystal controlled oscillator.

IP Address

The Internet Protocol address; a unique numeric address such as 123.231.32.2 Also see Static IP and Dynamic IP.

Iris

The adjustable opening (mechanical diaphragm) through which light can pass and be regulated.

J

JPEG

A digital image format commonly used in digital recording, for storing high-quality color and grayscale photographs in compressed bitmap form.

L

Lens

A transparent optical component that converges light rays to form a two dimensional image of that object.

Level Control

Main iris control. Used to set the auto-iris circuit to a video level desired by the user. After set-up, the circuit will adjust the iris to maintain this video level in changing lighting conditions. Turning the control towards High will open the iris, to

License Plate Reading

License plate reading requires specialized equipment in order to successfully overcome the challenges related to speed, lighting, reflectivity and headlight glare. Cameras chosen should be designed specifically for license plate reading as most conventional cameras will not work on a consistent basis. Infrared lighting is typically required for performance during both day and night.

Line Amplifier (Video Line Corrector)

A device to make good the loss of signal strength and quality due to long cable runs.

Line Lock

To synchronize the field sync pulses, of an AC powered camera, to the frequency of the voltage input (line voltage).

Looping

A term indicating that a high impedance device has been permanently connected in a parallel to a video source. Individual balanced video outputs for each video input.

Luminance (Y)

The part of a video signal that consists of the monochrome data.

Lux

A unit measuring the intensity of light. One foot-candle = 10 lux.

M

Manual Iris Lens

A lens with a manual adjustment to set the iris opening (F stop) in a fixed position. Generally used for fixed lighting applications.

Matrix Switcher

A switcher able to route any of its camera inputs to any of its monitor outputs; a name usually reserved for large systems, that often includes telemetry control.

MATV

Short for Multiple Access Television. The method for distributing RF TV signals by broadcasting them through the air.

Mechanical Focus (Back-Focus, Racking)

The mechanical aligning of the imaging device with the focal point of the lens; most important on zoom lenses to ensure the image stays in focus throughout the zoom range.

Megabyte (MB)

1,048,576 bytes or 1,024 kilobytes. Used to measure computer memory. Sometimes used to mean 1 million bytes or 1,024,000 bytes (1,000 kilobytes). Also see Gigabyte.

Microwave

Radio frequencies between 1 - 30 GHz used for video transmission over medium/long distance.

Minimum Object Distance (M.O.D.)

The closest distance a given lens will be able to focus upon an object. This is measured from the vertex (front) of the lens to the object. Wide angle lenses generally have a smaller M.O.D. than large focal length lenses.

Modulate

To change or vary some parameter such as varying the amplitude of a signal for amplitude modulation or the frequency of a signal for frequency modulation. A modulator is the circuit that modulates the signal.

Monitor

A device that converts electronic signals into the video image that was generated by the camera and lens. The picture end of a CCTV system.

Monochrome

Having only one color. In television it is black and white.

MPEG

MPEG is a video compression method commonly used in digital recording. MPEG-1 is a standard for CD-ROM video and audio. MPEG-2 is a standard for full-screen, broadcast quality video. MPEG-4 is a standard for video telephony.

Multiplex (Time Multiplex)

Using one carrier to send more than one signal. In video multiplexers, achieving this by sending a MUX A multiplexer.

N

N.T.S.C. (National Television Standards Committee. See E.I.A.)

Color TV system used in the USA. CCTV

N/D (Neutral Density)

A filter that attenuates light equally over the whole visible spectrum.

Noise

Undesired signal(s) that corrupts the original video signal and may reduce image quality.

P

P.A.L. (Phase Alternate Line. See CCIR)

Color TV system used in the UK

P.S.T.N. (Public Switched Telephone Network)

Standard phone lines used to transmit fastscan pictures via modems.

Pan

Side-to-side movement of a camera (on a horizontal axis).

Passive

A non powered element of a system.

Peak-To-Peak

The amplitude difference between the most positive and the most negative excursions of a signal.

Peripheral

An optional device that can enhance a CCTV system, for example, a multiplexer, VCR, photo printer, etc.

Phase Adjustable (See Line Lock)

The ability to delay the line locking process, so as to align cameras fed from A.C. voltages on different phases.

Photocell

Automatically switches on the infra-red lights when light levels fall to a preset level.

Pinhole Lens

Lens used for applications where the camera/lens must be hidden. Front of lens has a small opening to allow the lens to view an entire room through a small hole in a wall.

Pip

Picture in picture.

Pixel

Picture element. The smallest cell or area of a CCD chip capable of displaying detail on a screen. The greater the number of pixels, the higher the resolution.

Presets

The pre-positioning of pan, tilt and zoom cameras by the use of potentiometers in the moving parts of the camera head. These allow the control equipment to store and move to a set reference point when the controller dictates or when an alarm exists.

Q

Quad

A device that compresses up to four video signals and simultaneously displays the images onto one monitor.

R

Rack Mount (19" Rack)

An industrial standard housing 19" wide, its height is measured in units (U's) of 1.75".

Radio Frequency (R.F.)

Signals with a repetition rate above audible range, but below the frequencies associated with heat and light.

RAID

Redundant Arrays of Independent Disks. The use of two or more disk drives instead of one disk, which provides better disk performance, error recovery, and fault tolerance, and includes interleaved storage techniques and mirroring of important data.

Random Interlace

A scanning technique commonly used in CCTV systems in which there is no external control over the scanning process. That is, there is no fixed relationship between adjacent lines and successive fields.

Range Finder

Used to determine the focal length needed and what the picture will look like on the monitor. The user looks through the device and adjusts the range finder to the desired picture. Numbers on the outside of the range finder indicate the focal length needed.

Raster

The rectangular pattern of scanning lines upon which the picture is produced. The illuminated face of the TV monitor without the video information present.

Reflected Light

The scene brightness or the light being reflected from a scene.

Resolution

A measure of the ability of a camera or television system to reproduce detail. Typically refers to the number of picture elements that can be reproduced with good definition.

Roll

A loss of vertical sync which causes the picture to move up or down on the TV screen.

Rs232

A commonly used computer serial interface.

S

S.E.C.A.M. (See CCIR)

Color TV system used in France.

S.V.H.S. (Super Video Home System)

New format high resolution VHS video recorders, capable of giving greatly improved picture if all features are used. VHS compatible.

S/N Ratio (Signal To Noise Ratio)

Measure of noise levels of a video signal; the higher the number the better.

Saturation (Color)

The vividness of a color. It is directly related to the amplitude of the chrominance signal.

Scanner

A pan only unit.

Scanning

The rapid movement of the electron beam in a pickup device of a camera or in the CRT of a television receiver. It is formatted in a line-for-line manner across the photo sensitive surface which produces or reproduces the video picture. When referred to a

SCSI

Small Computer Systems Interface (Pronounced "scuzzy".) A ultra high-speed interface that can connect to computer devices such as a hard drive or CD-Rom. A SCSI channel can connect up to seven devices.

Sensitivity

A camera's ability to reproduce a given scene with a given amount of light. Usually expressed in foot-candles or lux.

Sensor

A device that indicates a change of state in response to an event or stimulus. See Image Device.

Sequential Switchers

Are commonly used devices in small to medium sized CCTV systems. The sequential switcher alternates the displayed video image from one camera to the next. However, with sequential switching not all cameras can be viewed simultaneously.

Simplex (Multiplexer)

A multiplexer with 1 frame store that can either time multiplex records or show multi-screen pictures in live or play back. It cannot record the multiplexer pictures whilst showing multi-screen pictures.

Solving Focus Shift

Filtering techniques can be applied to solve the problem of focus shift under active infrared lighting. Cameras behave differently under visible light and infrared light, with one of the chief differences being focal properties. Day-night mechanical filters solve this problem by blocking IR light from during the day and optimizing IR response during the night. The result is a sharply focused image in day and dark conditions.

Spot Filter

A small insert used in a lens to increase the f-stop range of the lens.

Static IP Address

A Static or Dedicated IP address is a type of account from an ISP where your computer or network is assigned the same constant IP Address at all times. Also see IP Address and Dynamic IP.

Switcher

A device used to switch the video signals from two or more cameras on a monitor.

Super HAD CCD

Super HAD (Hole Accumulation Diode) CCDs allow more light to pass to each pixel, increasing sensitivity and reducing noise.

Sync

Abbreviation for synchronization. Electronic pulses that are inserted in to video signal for the purpose of assembling the picture information in the correct position.

T

T.V.L. (Television Lines - Resolution)

The maximum number of changes between light and dark on a picture across 3/4 of the width dictates the resolution of a CCTV product, measured in TVL.

Tearing

A picture condition in which horizontal lines are displaced in an irregular manner.

Telemetry

A system utilizing 'control code' transmitters and receivers. These use the video cable or a simple twisted pair cable to send their information.

Telephoto

A lens used to produce a larger image of a distant object.

Terminated (75 Ohm Terminated)

Video input of a piece of CCTV equipment, wired to be the last in a particular video line.

Tilt

The up and down tilting movement of a camera. To elevate or depress the vertical angle of view.

Time Zone

Time intervals during which an activity is permitted.

Timebase Corrector (T.B.C.)

Electronic circuit that aligns unsynchronized video signals before signal processing. Used in multiplexers and quad splitters.

Time-Lapse VCR

Video recorder that can record frames with pauses between them thereby extending the time that a standard length tape will last.

Triplex (TM)

Multiplexer feature that gives you the ability to simultaneously view both playback and live cameras within the same multi-screen, while still encoding.

Twisted Pair

A cable, often screened, that consists of two conductors twisted together along their length

U

Uninterrupted Power Supply (Ups)

Equipment that supplies power to a system in the event the primary power is lost. It may consist of batteries or auxiliary motor generators.

Unterminated (Hi-Z)

Video input of a piece of CCTV equipment, wired so as to allow the video signal to be fed to further equipment. Does not necessarily include extra sockets for the extra coaxial cables.

V

Varifocal Lens

See Zoom Lens. Usually not motorized (manual).

VCR

A device that records video images on tape.

Vertical Interval Switching

Sequential switchers waiting until the current field has finished before they display the next camera, even though the dwell time has elapsed.

Vext

A multiplexer feature that uses a pulse generated by the VCR so that the multiplexer automatically adjusts to the VCR time lapse speed.

Video Motion Detection (V.M.D.)

A system that uses the video signal from a camera to determine if there is any movement in the picture and set of an alarm.

Video Printer

A device that prints a hard copy image from a video signal.

Video Type Lens

An auto-iris lens without an internal circuit to control the iris. All iris control voltages come from a circuit located within the camera.

Visible Light

Wavelengths of light visible to the human eye.

W

Wavelet

A digital file commonly used in digital recording, which contains a representation of sound waves in digital form; limited in duration and frequency.

White Light

The entire spectrum of visible light.

Y

Y/C

A method of sending video pictures in 2 separate parts down 2 separate cables. The component parts are Y (the Black and White portion) and C (the color portion).

Z

Zoom

The ability to change the magnification of a scene.

Zoom Lens

A lens with a variable focal length. This lens may be effectively used as a wide angle, standard, or telephoto lens by varying the focal length of the lens. A varifocal lens.

Zoom Ratio

The ratio of starting focal length (wide position) to the ending focal length (telephoto position) of a zoom lens. Typically 10X.