

GLOSSARY OF TERMS - CCTV

ABBREVIATION	Meaning
AC	Alternating Current
ACCESS CONTROL SYSTEM	Electronic system used to allow, restrict and track the movement of people through entry/exit points in a site. This is achieved through the use of electronic individual codes, keys or cards etc, to release a locking mechanism.
ACTIVITY DETECTION	A feature built into some multiplexers, which is used to detect movement within a camera's field of view that is then used to improve camera recording update rate.
AGC (AUTOMATIC GAIN CONTROL)	An electronic circuit that is used to boost the video signal in a camera in low light conditions. Use of this feature will usually give a "noisy" or grainy picture. When comparing camera specifications always use data with AGC off.
ALARM INTERFACE	A facility which allows the use of external alarm equipment such as PIR's, magnetic contacts etc to be connected to CCTV equipment so that when the alarm is activated the CCTV equipment will automatically carry out a pre programmed function such as switching to record a given camera.
ALC (AUTOMATIC LIGHT CONTROL)	A feature of an Auto Iris lens used to adjust the between peak and average voltage which will emphasise detail in bright areas (peak), or shadows (average).
ALGORITHMS	Complex mathematical formulae or rules used to solve complex problems in CCTV they are used to achieve digital compression of a video picture.
ALIASING	Also known as Moiré patterning. This is an effect that occurs when an analogue signal is sampled digitally at a sampling frequency less than twice the signal frequency. The effect can be minimised by a technique known as optical low-pass filtering.
ANALOGUE SIGNAL	A signal in which the level is represented by a directly proportional voltage. In video the cameras scene is represented by varying the voltage in the video signal where the voltage is directly proportional to the light level.
ALKALINE BATTERY	DC power source with a longer life than a standard battery. Cannot be recharged.

AMPLITUDE	Expression of the strength of a video signal at a given point. Measured in Volts.
ANGLE OF VIEW	Represents the area of a scene (maximum horizontal and vertical angle) that can be seen through a lens. Measured in degrees.
APERTURE	The light gathering part of a lens. The size of the aperture is controlled by the Iris. Aperture size is expressed as an “f” number. The lower the “f” number the greater the amount of light gathered by the lens.
ASPECT RATIO	The ratio between the width and height of a video picture. The standard Aspect Ratio for CCTV Monitors, NTSC and PAL systems is 4:3.
ASPHERICAL LENS	A type of lens, which has a non-spherical shape. It is harder and more expensive to manufacture, but it offers certain advantages over a normal spherical lens.
ATTENUATION	The decrease in magnitude of a signal, as it travels through a medium. Used to describe signal loss in a transmission system. Measured in decibels (dB).
AUDIBLE DETECTOR	A device used to detect sound. In CCTV system it can be interfaced with a switcher to switch on a nominated camera when the detector is activated.
AUTO BALANCE	System used in colour cameras to detect and automatically correct errors in the amplitude of colour signals.
AUTO IRIS (AI)	An automatic method of varying the size of a lens aperture to allow the correct amount of light to fall on the imaging device. The lens Includes a tiny motor and amplifier, which are used to maintain a one-volt Peak to peak video signal.
AUTO PAN	A feature of a pan and tilt head or dome, which allows the camera to pan continually between two preset points.
AVERAGE VIDEO SIGNAL	Represents the average light level of a picture and is used to open or the iris in an Auto Iris lens.
BACK-FOCUS	A fine mechanical adjustment in a camera that is used to adjust the imaging device relative to the lens to ensure that it is at the exact focal point for the lens fitted. This adjustment is especially important when fitting a zoom lens.

BACKLASH	An effect noticed in Pan and Tilt units, whereby the unit does not come to a smooth stop at the end of the pan movement. This is usually caused by play in the mechanical components of the unit or by attempting to bring the unit to an instant stop.
BALANCED SIGNAL	This is a video signal that has been converted to enable it to be transmitted along 'twisted pair' cables. Usually used where the signal has to be transmitted over long distances, which would produce unacceptably high losses in Coaxial cable.
BANDWIDTH	The frequency range required to carry an electronic signal without attenuation or loss.
BARREL DISTORTION	A distortion in a monitor due to non uniform scanning which causes the image to appear to bulge outward like a barrel.
BAUD	Data transfer rate, named after Maurice Emile Baud, Equal to 1bit per second.
BIT	Acronym formed from "binary digit". The basic unit of information in a computer or digital system Either 1 or 0.
BLACK LEVEL	Part of the video signal, just above the sync level corresponding to 0.3v This is where black parts of an image are electronically represents.
BLANKING PULSE	A black pulse added to a monitor signal during the fly back period to make the return trace video signal invisible on the screen.
BNC	Standard connector used to connect coaxial cables to CCTV equipment or each other.
BRIDGING SWITCHER	Term for a multi-input sequential video switcher, which includes a sequencing output and spot output.
BRIGHTNESS	Term for the intensity of illumination of a reproduced video picture.
BRIGHTNESS CONTROL	Control, which increases or decreases the illumination of phosphors on a monitor screen to vary the brightness.
BRAID	A group of textile or metallic filaments inter-woven to form a tubular structure, which may be applied over one or more wires, or flattened to form a strap.
BYTE	A group of eight bits.

BROADCAST CAMERA	High quality, high-resolution camera used by the professional broadcast industry.
CAD	Computer Aided Design. Method of producing complex designs using computer based software programs.
CABLE COMPENSATED AMPLIFIER	High frequency signals are attenuated when transmitted through cables. A Cable Compensated Amplifier boosts the high frequency signals depending on the cable distance. This ensures the minimum video loss.
CABLE CORE	The central part of the cable, which actually carries the video, power and control signals. This can be constructed as a single conductor, or from wire strands.
CABLE JACKET	The outer protective coating, which covers the Cable Core.
CCIR	Comitee Consultatif International des Radiocommunique. European standardisation body that has set the standards for television signals in Europe. 625 lines, 25 frames per second.
CCTV	Closed Circuit Television. Television system intended to be viewed by restricted personnel and with a dedicated purpose. Pictures from a CCTV system are not intended to be broadcast for general viewing.
CCVE	Closed Circuit Video Equipment. Alternative term for CCTV.
CFA	Colour Filter Array. Optical pixel filters used in single chip colour CCD cameras, to produce the colour components of a video signal.
CHANNEL SEPARATION	The term for the separation of signals when multiplexed at different frequencies for transmission down a single cable.
CHROMATIC ABERRATION	Optical term, which refers to the distortion of an image as a result of a scattered focal point caused by a defect in a lens. A combination of lens can be used to correct this effect.
CHROMINANCE SIGNAL	The part of the video signal that contains the colour information. In composite video The chrominance signal is multiplexed at a higher frequency than the signal and transmitted down the same cable. In S-VHS this signal is transmitted along a separate cable.

CLADDING	The outer part of a fibre optics cable. The cladding is less dense than the central core, and acts as an optical barrier to prevent the transmitted signal from leaking away from the core.
C-MOUNT	Standard lens mounting with a 17.526mm back flange (distance between the lens mount and the focal point). Normally used on 2/3" and 1" cameras and lenses.
COAXIAL CABLE	Term for cable in which two or more conductors share the same axis. Normally consists of a single inner core and an outer shield. This is the standard cable used to carry video signals in CCTV installations, because it does not produce and is not influenced by external fields.
COLOUR STRIPE FILTER	A filter that is placed in front of a colour CCD chip to break up the light into the basic colours (Red, Green, and Blue) The individual colours are then directed at different pixels on the chip.
COMMON SYNC	Device used to synchronise cameras by generating a synchronising pulse that is sent to all cameras connected to it.
COMPOSITE VIDEO	The complete video signal, comprising both the video and sync information.
CONCAVE LENS	Type of lens in which the light rays passing through it are made to diverge by the inward curve of the glass surface.
CONDUIT	Plastic or metallic pipe, which is used to conceal and protect cables and wiring.
CONTRAST	The difference in intensity between the darkest and the brightest parts of an image.
CONTRAST CONTROL	The control on a monitor used to change the contrast by varying the amplitude of the video signal.
CONVEX LENS	Type of lens in which the light rays passing through it are made to converge by the outward curve of the glass surface.
COVERT CAMERA	Type of CCTV camera, which is concealed to allow video recordings to be made without the knowledge of the subjects.
CPU	Central Processing Unit. The heart of a computer or computer based device.

CRIMPING	Term used to describe the process of joining a cable to a connector without screwing or soldering. Requires a special crimping tool to ensure a proper connection.
CRO	Cathode Ray Oscilloscope (see Oscilloscope).
CROSSTALK	Noise generated by the interference between adjacent video, audio or data signals in a multiplexed signal.
CS-MOUNT	Standard lens mounting with a 12.5mm back flange (the distance between the lens mount and the focal point) Normally used on modern ¼", 1/3", and ½" cameras and lenses.
DARK CURRENT	Leakage signal from a CCD sensor in the absence of incident light.
DARK NOISE	Noise caused by the random (quantum) nature of the dark current.
DECIBEL (DB)	A logarithmic ratio between two electrical signals or values. Usually refers to power, but can also be used for voltage and current.
DC	Direct Current.
DE-MULTIPLEXING	The process of separating different video, audio, or data signals, which were multiplexed at source.
DEPTH OF FIELD	The distance between the nearest and furthest object in a scene which appear in sharp focus. Depth of field varies depending on the f-stop and focal length of a lens. Depth of field increases when the f-stop is greater, the focal length shorter or the distance to the object is increased.
DIELECTRIC	An insulating (non-conductive) material. Found between the inner core and outer shield of a co-axial cable.
DIGITAL SIGNAL	An electronic signal, which is represented by binary numbers, and that, can be processed by a microprocessor, or stored in an electronic memory.
DOMES	Term used to describe a type of camera housing made of smoked glass or plastic usually containing a pan and tilt head and used for discreet surveillance.
DOS	Disk Operating System. A software package that makes a computer work with its hardware devices such as hard drive, floppy drive, screen, keyboard, etc.

DSP	Digital Signal Processing. Refers to an electronic circuit capable of processing digital signals.
DUPLEX	A system that is capable of handling two channels of information simultaneously. In CCTV, duplex is used to describe a multiplexer that can record in multiplex mode whilst simultaneously displaying multi-screen pictures.
DWELL TIME	When relating to video switchers this is the time that a picture remains on a monitor before being replaced by the next picture.
EAS	Electronic Article Surveillance. System used in retail stores to prevent shoplifting by attaching tags to the merchandise, which activate an alarm when passed through detectors. These systems are often interfaced with CCTV systems.
EBU	European Broadcasting Union.
EIA	Electronics Industry Association. American Association that sets the standard for video broadcast in the USA and Canada (525 lines, 30 frames per second).
ELECTRON BEAM	A concentrated flow of electrons in a nominated direction.
EMI	Electro Magnetic Interference. Interference caused by an item of electrical equipment radiating electro magnetic frequencies.
ENG CAMERA	Electronic News Gathering camera usually refers to CCD cameras in the broadcast industry.
EPROM	Erasable and Programmable Read Only Memory. An electronic chip used in many different security products, which stores software instructions for performing various operations.
ERGONOMICS	The study of man, machine and the working environment to achieve maximum efficiency.
FIBRE OPTIC	A very efficient method of transmitting video and telemetry signals over long distances using a light beam transmitted along a fibre optic cable constructed from high density Silica Glass.
FIELD	Half of a single frame, consisting of either the odd or even lines. In a PAL system this is 312.5 lines.
FIELD OF VIEW	The height and width of view that can be seen through a lens.

FIXED LENS	A lens with a pre-determined fixed focal length. Normally has a focusing control and a choice of iris functions. Available in a range of sizes to suit different applications.
FLY BACK PERIOD	The time taken for a signal to move from the end of a field, frame or line to the start of the next field frame or line. Also called the retrace period.
FOCAL LENGTH	The distance between the optical centre of a lens and the focal point.
FOCUSING RING	Ring on the outside of a lens to allow adjustment to obtain correct focus.
FOOT-CANDELA	Unit of Illuminance. 1 Foot-candela =1 Lumen of light incident on 1sq ft of surface area.
FRAME	Basic unit of a motion picture, made up of 2 fields or 625 lines (in a PAL system).
FRAME INTERLINE CHIP	A type of CCD imaging device, which is expensive to manufacture and is currently used in broadcast quality cameras. This type of chip overcomes many of the shortcomings of the existing CCD chips used in CCTV cameras.
FRAME STORE	An electronic device used to capture and digitally store a video image. Can be a stand-alone unit or incorporated in other equipment such as fast scan transmitters or video motion transmitters.
FRAME SWITCHER	A basic form of multiplexer, which can be used to record multiple cameras on a single VCR.
FRAME TRANSFER	A type of CCD Imaging device in which the pixels have a dual role of sensing the light and transferring the charge. This can result in picture smearing, which is a major shortcoming of this device.
GALVANOMETER	In CCTV this term refers to a method of operating an auto iris lens. The changing light level causes a change in the current induced into a minute coil, which in turn causes movement in the Iris diaphragm.
GAMMA CORRECTION	A method of correction used in cameras to balance the brightness seen by a camera to that of the monitor.
GEN-LOCK (EXTERNAL SYNC)	A method of synchronising a number of cameras in a system to ensure that they all produce fields at the same time. This is used to prevent picture "bounce" when switching between cameras and can improve the overall quality and update time of recordings when using switchers or multiplexers.

GROUND LOOP CURRENT	In CCTV this term refers to a current that is produced in a cable as a result of a difference in earth potential existing at each end of the cable. The result of this is noise (interference) introduced in the signal.
GROUND LOOP INSULATOR	A transformer with no direct connection between the inputs and outputs, used to eliminate Ground Loop Currents.
GUI	(Graphical User Interface). A term used to describe the interface between a computer screen and the user. Now used in CCTV Systems to describe features such as touch screen control of systems and equipment.
HARDWIRED	Refers to a method of controlling CCTV equipment by using multi-cored cable run between the controller and device to be controlled. Only used where the distance between controller and controlled device is short.
HERTZ	The unit of measurement for frequency in a signal. 1 Hertz = 1 cycle per second.
HOMING SWITCHER	Term used to describe a sequential switcher with only one output.
HORIZONTAL RESOLUTION	The number of vertical lines that can be resolved in a picture.
HORIZONTAL SHIFT REGISTER	Part of the CCD image device to which the charge from the pixels is transferred line by line. This charge is then converted into an analogue video signal.
ILLUMINANCE	The amount of light, which falls onto a given surface area. Measured in lux.
IMAGING DEVICE	A vacuum tube or solid state device in which the vacuum tube light sensitive face plate, or solid state light sensitive array, provides an electronic signal from which an image can be created.
IMAGE INTENSIFIER	A device used to intensify light through the use of light sensitive phosphor screens. Used to intensify camera performance under low light conditions.
IMPEDANCE	The total opposition to current flow in an a.c. electrical circuit. Measured in Ohms.
INDEX OF REFRACTION	The ratio between the angle of incidence to the angle of refraction of light. Index varies depending on the density of the medium. The denser the medium, the higher the index.
INFRARED LIGHT	Light produced at the red end of the spectrum. Not visible to the naked human eye.

INFRARED ILLUMINATOR	Light source, which emits light in the infrared part of the spectrum. Used to illuminate scenes to provide views at night from infra sensitive monochrome cameras.
INFRARED TRANSMISSION	Method of transmitting signals using an infrared beam. Allows CCTV signals to be transmitted where cables cannot be run. Signals can be degraded over long distances or in adverse weather conditions.
INTERFERENCE	Effect caused by the introduction of unwanted electrical signals into an electrical circuit. In CCTV this results in “noise” in the signal or picture, which disrupts the picture.
INTERLACING	The process of combining odd and even fields to form a frame.
INTERLINE TRANSFER	A type of CCD imaging device in which the charge is processed according to the amount of light falling on the sensors and then transferred immediately. This is the most common form of imaging device used in current CCTV systems.
IP RATING	Index of protection that refers to the level of protection provided by equipment housings, against the ingress of dust or moisture.
IRIS	The part of a lens that is used to control the amount of light that passes through the lens and onto the imaging device.
ISDN	(Integrated Services Digital Network). Telecommunications network that is capable of transmitting digital signals at speeds of up to 128kb/sec.
LAN	(Local Area Network). Means of connecting a number of computers to enable communication between each device connected to the network.
LASER	(Light Amplification by Stimulated Emission of Radiation). In CCTV this source of exceptionally pure light can be used to transmit signals along fibre optic cables, providing very high quality signal and data transmission.
LED	(Light Emitting Diode). A semiconductor that produces light when stimulated by an electric current. In CCTV these are used as the light source in some fibre optic transmission systems, and as light the light source for illuminating scenes for use with Monochrome cameras.

LENS	An optical device for focusing light onto the imaging device in a camera.
LENS CALCULATOR	A calculator used to calculate the most suitable lens to provide an image of a given scene when used with a specific camera.
LENS HUNTING	A problem encountered when an auto iris lens opens and closes alternatively because it is unable to find the correct level.
LENS MOUNT	See C-mount or CS-mount.
LENS WHEEL	See Lens calculator.
LIGHT SENSOR	A device that is activated when a preset amount of light is present on the sensor. Used to switch on/off infrared illuminators.
LINE	The basic unit of a frame or field containing the charge, which is proportional to the light falling at various points on the scanning line.
LINE-LOCKED	Refers to a method of synchronising cameras to a common AC frequency.
LOOPING SWITCHER	Refers to a type of switcher where signals are looped through the switcher without being affected by the operation of the switcher itself.
LUMEN	Unit of light measurement of light radiation. 1 Lumen = amount of light emitted by a light source of 1 Candela.
LUMINANCE	Brightness. In CCTV refers to the part of the video signal that contains information about the scene brightness.
LUMINOUS FLUX	The rate of flow of light.
LUX	Unit of illumination. 1 Lux = the amount of uniform light falling onto a surface of 1sq metre. Measured in Lumens per square metre.
MAGNIFICATION RATIO	The ratio between the focal length of a lens and the focal length of a standard angle lens. Indicates the magnification of the image when compared to an image from a standard angle lens.
MANUAL IRIS	Type of lens that requires manual focusing.
MATRIX SWITCHER	Advanced type of switcher in which a signal from any input can be switched to any number or combination of outputs. Generally used in larger and more complex systems the matrix will usually also incorporate a range of additional advanced features.

MICROWAVE TRANSMISSION	A method of transmitting signals using a microwave frequency link. Not affected by adverse weather but requires direct line of site. A licence may be required to operate a microwave frequency system.
MODEM	Derived from the term Modulate-Demodulate. A modem is used to convert between analogue and digital signal to then transmit and receive the signals over the PSTN network.
MOIRÉ PATTERN	An unwanted effect that appears in the video picture when a high frequency pattern is looked at with a CCD camera that has a pixel pattern close (but lower) to the object pattern.
MULTIPLEX VIDEO RECORDING	The condensed recording of more than one video signal on a single videotape, or hard disk drive.
MULTIPLEX	The concept of transmitting several signals on a single channel.
MULTIPLEXER	A device that combines a number of signals into one. Often used in CCTV to describe a device that is primarily used to multiplex several video signals into one for the purposes of recording or microwave transmission. It can also refer to a fibre optics multiplexer which combines a number of video signals into one in order to transmit all of them via a single fibre cable.
N/C AND N/O ALARMS	Refers to Normally Closed and Normally Opened contacts. It is usually used to describe alarms in CCTV.
NA	Numerical Aperture. A measure of the angular acceptance of light incoming into a fibre optics cable, in the form of a cone. It is expressed as the square root of the difference of the squares of the indices of the core and the cladding.
NBS	National Bureau of Standards (USA).
ND FILTERS	Neutral Density filters are optical filters that attenuate the light a number of times. This attenuation is equal for all the wavelengths therefore it does not change the colour balance of an image, hence the term neutral.
NIT	A photometric unit for measuring luminance. One nit is equal to one candela per square metre of a projected surface area.
NOISE	An unwanted signal produced by all electrical circuits working above the absolute zero. Noise cannot be eliminated but only minimised.

NTSC	National Television System Committee, an American committee that set the standards for colour television as used today in USA, Canada, Japan and a few other countries.
O/P	Output. Objective. The very first optical element at the front of a lens.
OCULAR	The very last optical element at the back of a lens (the one closer to the CCD chip).
OSCILLOSCOPE	(Also CRO, from "Cathode Ray Oscilloscope"). An electronic device that can measure the signal changes versus time. A must for any CCTV technician.
PAL	Stands for Phase Alternating Line, which describes the colour phase change in a PAL colour signal.
PAN AND TILT HEAD	(P/T head). A motorised unit permitting vertical and horizontal positioning of a camera and lens combination. Usually 24 VAC motors are used in such P/T heads, but also 110 VAC, ie. 240 VAC units can be ordered.
PAN UNIT	A motorised unit permitting horizontal positioning of a camera.
PHOT	A photometric light unit for very strong illumination levels. One phot is equal to 10,000 luxes.
PHOTODIODE	A type of semiconductor device in which a PN junction diode acts as a photo sensor.
PHOTO-EFFECT	Also known as photoelectric effect. This refers to a phenomenon of ejection of electrons from a metal whose surface is exposed to light. Photon. A representative of the quantum nature of light. It is considered as the smallest unit of light.
PHOTOPIC VISION	The range of light intensities, from 105 lux down to nearly 10 ⁻² lux, detectable by the human eye.
PINHOLE LENS	A fixed focal length lens, for viewing through a very small aperture, used in discrete surveillance situations. The lens normally has no focusing control but offers a choice of iris functions.
PIXEL	Derived from picture element. Usually refers to the CCD chip unit picture cell. It consists of a photo sensor plus its associated control gates.
PLUMBICON	Thermionic vacuum tube developed by Philips, using a lead oxide photoconductive layer. It represented the ultimate imaging device up to the introduction of CCD chips.

POLARISING FILTER	An optical filter that transmits light in only one direction (perpendicular to the light path), out of 360° possible. The effect is such that it can eliminate some unwanted bright areas or reflections, such as when looking through a glass window. In photography, polarising filters are used very often to darken a blue sky.
POTS	Plain Old Telephone Service, ie. the telephone service in common use throughout the world today. Also known as PSTN.
PRESET POSITIONING	A function of a pan and tilt unit, including the zoom lens, where a number of certain viewing positions can be stored in the systems' memory (usually this is in the PTZ site driver) and recalled when required, either upon an alarm trigger, programmed or manual recall.
PRINCIPLE POINT	An optical term that refers to one of the two points that each lens has along the optical axis. The principle point closer to the imaging device (CCD chip in our case) is used as a reference point when measuring the focal length of a lens.
PSTN	Public Switched Telephone Network usually refers to the "plain old telephone" service. Also known as POTS.
PTZ SITE DRIVER	(PTZ site receiver, or decoder). An electronic device, usually a part of a video matrix switcher, which receives digital, encoded control signals in order to operate pan, tilt, zoom and focus functions.
QUAD COMPRESSOR	(Also split screen unit). Equipment which simultaneously displays parts or more than one image on a single monitor. It usually refers to four quadrants display.
RAID	Redundant Arrays of Independent Disks. This a technology of connecting a number of hard drives into one mass storage device, which can be used, among other things, for digital recording of video images.
RAM	Random Access Memory. An electronic chip, usually known as "memory", holding digital information while there is power applied to it. Its capacity is measured in kilobytes.
RANDOM INTERLACE	A term describing a camera that has a free running horizontal sync as opposed to a 2:1 interlace type which has the sync locked and therefore has both fields in a frame interlocked together accurately.

REMOTE CONTROL	A transmission and receiving of signals for controlling remote devices such as pan and tilt units, lens functions, wash and wipe control and similar.
RETMA	Former name of the EIA association. Some older video test charts carry the name "RETMA Chart".
RF SIGNAL	Radio frequency signal that belongs to the region up to 300GHz.
RG-11	A video coaxial cable with 75 Ohms impedance and much thicker diameter than the popular RG-59 (of approximately 12 mm). With RG-11 much longer distances can be achieved (at least twice the RG-59), but it is more expensive and harder to work with.
RG-58	A coaxial cable designed with 50 Ohms impedance, therefore not suitable for CCTV. Very similar to RG-59, only slightly thinner.
RG-59	A type of coaxial cable that is most common in use in small to medium size CCTV systems. It is designed with an impedance of 75 Ohms. It has an outer diameter of around 6 mm and it is a good compromise between maximum distances achievable (up to 300 m for monochrome signal, and 250 m for colour) and good transmission.
RMS	An abbreviation for Root Mean Square. All AC voltages are measured with multimeters that show the RMS value of the signal (not the peaks). For a sine wave signal such as the mains, the RMS value happens to be 1.41 times (square root of 2) below the peak values.
ROM	Read Only Memory. An electronic chip, containing digital information that does not disappear when power is turned off.
RS-232	A format of digital communication where only two wires are required. It is also known as a serial data communication. The RS-232 standard defines a scheme for asynchronous communications, but it does not define how the data should be represented by the bits, ie. it does not define the overall message format and protocol. It is very often used in CCTV communications between keyboards and matrix switchers, or between matrix switchers and PTZ site drivers. The advantage of RS-232 over others is in its simplicity and use of only two wires.

RS-422	This is an advanced format of digital communication when compared to RS-232. The basic difference is in the need for four wires instead of two as the communications is not single-ended as with RS-232, but differential. In simple terms, the signal transmitted is "read" at the receiving end as the difference between the two wires without common earth. So if there is noise induced along the line, it will be cancelled out. The RS-422 can drive lines of over a kilometre in length and distribute data to up to 10 receivers.
RS-485	This is an advanced format of digital communications compared to RS-422. The major improvement is in the number of receivers that can be driven with this format, and this is up to 32.
S/N RATIO	Signal-to-Noise ratio is calculated with the logarithm of the normal signal and the noise RMS value.
SCENE ILLUMINATION	The average light level incident upon a protected area. Normally measured for the visible spectrum with a light meter having a spectral response corresponding closely to that of the human eye and is quoted in lux. Scotopic Vision levels are illumination levels below 10-2 lux, thus invisible to the human eye. Silicon. The raw material of which modern semiconductor devices are made.
SIMPLEX	In general, it refers to a communications system that can transmit information in one direction only. In CCTV, simplex is used to describe a method of multiplexer operation where only one function can be performed at a time, eg. either recording or playback individually.
SKIN EFFECT	The tendency of alternating current to travel only on the surface of a conductor as its frequency increases.
SLOW SCAN	The transmission of a series of frozen images by means of analog or digital signals over limited bandwidth media, usually telephone.
SMEAR	An unwanted side effect of vertical charge transfer in a CCD chip. It shows vertical bright stripes in places of the image where there are very bright areas. In better cameras smear is minimised to almost undetectable levels.
SMPTE	Society of Motion Picture and Television Engineers. Spectrum analyser. An electronic device that can

	show the spectrum of an electric signal.
SPECTRUM	In Electromagnetics, spectrum refers to the description of a signal's amplitude versus its frequency components. In optics, spectrum refers to the light frequencies composing the "white light" which can be seen as rainbow colours.
SPG	Stands for Sync Pulse Generator. A source of synchronisation pulses.
SPLIT SCREEN UNIT	(Quad compressor). Equipment which simultaneously displays parts or more than one image on a single monitor. It usually refers to four quadrants display.
S-VHS	Super VHS format of video recording. A newer standard proposed by JVC, preserving the downward compatibility with the VHS format. It offers much better horizontal resolution up to 400 TV lines. This is mainly due to the colour separation techniques, high quality video heads and better tapes. Sync. This is short from synchronisation pulse.
TBC	Time Base Correction. Refers to the synchronisation of various signals inside a device such as a multiplexer or a TBC Corrector.
TDG	Short for time and date generator.
TELEMETRY	Remote controlling system of, usually, digital encoded data, intended to control pan, tilt, zoom, focus, preset positions, wash, wipe and similar. Being digital, it is usually sent via twisted pair cable, or coaxial cable together with the video signal.
TERMINATION	This usually refers to the physical act of terminating a cable with a special connector, which for coaxial cable is, usually, BNC. For fibre optic cable this is the ST connector. It can also refer to the impedance matching when electrical transmission is in use. This is especially important for high frequency signals, such as the video signal, where the characteristic impedance is accepted to be 75 Ohms.

TIME LAPSE VCR	(TL VCR). A video recorder, most often in VHS format, that can prolong the video recording on a single tape up to 960 hours (this refers to a 180 min tape). This type of VCRs are very often used in CCTV systems. The principle of operation is very simple - instead of having the video tape travel at a constant speed of 2.275 cm/s (which is the case with the domestic models of VHS VCRs), it moves with discrete steps which can be controlled. Time Lapse VCRs have a number of other special functions very useful in CCTV, such as external alarm trigger, time and date superimposed on the video signal, alarm search and so on.
TIME LAPSE VIDEO RECORDING	The intermittent recording of video signals at intervals to extend the recording time of the recording medium. It is usually measured in reference to a 3 hr (180 min) tape.
TIME MULTIPLEXING	The technique of recording several cameras onto, usually, one time lapse VCR by sequentially sending camera pictures with a timed interval delay to match the time lapse mode selected on the recorder.
UHF SIGNAL	Ultra high frequency signal. In television it is defined to belong in the radio spectrum between 470 MHz and 850 MHz. Unbalanced signal. In CCTV, this refers to a type of video signal transmission through a coaxial cable. It is called unbalanced because the signal travels through the centre core only, while the cable shield is used for equating the two voltage potentials between the coaxial cable ends.
UPS	Uninterruptible power supply. These are power supplies used in the majority of high security systems, whose purpose is to back-up the system for at least 10 minutes without mains power. The duration of this depends on the size of the UPS, usually expressed in VA, and the current consumption of the system itself.
VDA	Video Distribution Amplifier. A device that provides multiple outputs from one video signal such that interference to one output will not affect others.
VERTICAL SHIFT REGISTER	The mechanism in CCD technology whereby charge is read out from the photo sensors of an Interline Transfer or Frame Interline Transfer sensor.

VHF	Stands for Very High Frequency. A signal encompassing frequencies between 30 and 300 MHz. In television, VHF Band I uses frequencies between 45 MHz and 67 MHz, and between 180 MHz and 215 MHz for Band III. Band II is reserved for FM radio from 88 MHz to 108 MHz.
VHS	Stands for Video Home System, as proposed by JVC, a video recording format that is most often used in homes, but also in CCTV. It has its own limitations due to the concept itself, the speed of recording, the magnetic tapes used and the colour separation technique. Most of the CCTV equipment today supersedes VHS resolution.
VIDEO EQUALISATION CORRECTOR	(Video Equaliser). A device which corrects for unequal frequency losses and/or phase errors in the transmission of a video signal. Video frame store. A device which enables digital storage of one or more images for steady display on a video monitor.
VIDEO IN-LINE AMPLIFIER	A device providing amplification of a video signal.
VIDEO MATRIX SWITCHER	(VMS). A device for switching more than one camera, VCR, video printer and similar, to more than one monitor, VCR, video printer and similar. Much more complex and more powerful than video switchers.
VIDEO MONITOR	A device for converting a video signal into an image.
VIDEO MONITOR	A device for converting a video signal into an image.
VIDEO PRINTER	A device for converting a video signal to a hard copy printout. It could be a monochrome (B/W) or colour. They come in different format sizes. Special paper is needed.
VIDEO SIGNAL	An electrical signal containing all of the elements of the image produced by a camera or any other source of video information.
VIDEO SWITCHER	A device for switching more than one camera to one or more monitors manually, automatically or upon receipt of an alarm condition.
VITS	Video Insertion Test Signals. Special shaped electronic signals inserted in the "invisible" lines (in the case of PAL, lines 17, 18, 330 and 331) that are used to determine the quality of reception.
VLF	Very Low Frequency. Refers to the frequencies in the band between 10 and 30 kHz.

VMD	Video Motion Detector. A detection device generating an alarm condition in response to a change in the video signal, usually motion, but it can also be change in light. Very practical in CCTV as the VMD analyses exactly what the camera "sees", ie. there are no blind spots.
VS	Vertical Sync.
WHITE LEVEL	This is a part of the video signal that electronically represents the white part of an image, and resides at 0.7 V from the blanking level, whereas the black part is taken as 0 V.
W-VHS	A new Wide-VHS standard proposed by JVC, featuring a high-resolution format and aspect ratio of 16:9.
Y/C	A video format found in Super VHS video recorders. Luminance is marked with Y and is produced separate to the C, which stands for chrominance. Thus, a S-VHS output Y/C requires two coaxial cables for a "perfect" output.
ZOOM LENS	A lens in which the focal length can be varied within a pre-defined range. The lens has a focusing control and a choice of iris functions.