

CCTV Glossary

Camera, DVR, and VIP products



BOSCH

Glossary of CCTV Terms

0-9

10/100 Base-T IEEE-802.3 specification for 10 or 100 MBit/s Ethernet.

A

AAC	Advanced Alarm Control: A flexible and sophisticated alarm management subsystem that allows rules to be created that define which input(s) activate one or more outputs. In its most basic form, a rule could define which input(s) should activate which output(s). In a more complex form, a rule can be programmed to take a specific keyboard command (pre-existing or not) and perform a dome function, or any combination of the above.
ARP	Address Resolution Protocol: A protocol for mapping MAC and IP addresses.
Address	Each unit has a numerical address in the control system in which it is located. This allows the appropriate unit to be operated.
Advanced Diagnostics	Bosch's combination of built-in On Screen Displays (OSD) and status LEDs that are used to check critical camera parameters such as internal temperature, input voltage levels, and network connectivity. This allows a technician to quickly determine the source of problems and to ensure that the dome is functioning within the correct operating limits.
AGC	Automatic Gain Control: The electronics that regulate the gain or amplification of the video signal.
Aperture	The size of the opening in the iris, which controls the amount of light that reaches the CCD Sensor. The larger the F-Stop numbers, the less light reaches the sensor.
AutoBlack	A technique of boosting the video signal level to produce a full amplitude video signal, even when the scene contrast is less than full range (glare, fog, mist, etc.). The darkest part of the signal is set to black and the lightest part to white, thus increasing the contrast.
AutoDome	Fully integrated, high speed, pan/tilt/zoom camera built into a protective dome housing allowing full and continuous 360° coverage of the scene.
AutoFocus	The lens continuously adjusts to the correct focus automatically for the sharpest picture.
AutoIris	The lens iris opening is automatically adjusted to allow the correct illumination of the camera sensor.
AutoPan	The camera pans continuously between right and left limit settings.
AutoPivot	As the camera tilts through the vertical position, the camera rotates to maintain the correct orientation of the image.
AutoPlayback	This function records the sequence of movements of the camera's PTZ for later playback allowing a set pattern to be repeated automatically. This function is often called Guard Tour.
AutoScaling	As the camera zooms in to increase the size of objects on the monitor screen, the pan and tilt speeds are reduced so that the relative speed on the screen remains constant for similar joystick control positions.
AutoTrack	A patented technology that integrates motion detection into the camera allowing tracking of an object and zooming in to optimize size and perspective.

AWB	Auto White Balance: A feature that allows a color camera to automatically adjust its output color to give a natural color, independent of the lighting used.
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B

Balun	Short for Balance/Unbalanced. A device that converts a balanced video signal (e.g. as used on twisted pair) line to an unbalanced signal (e.g. as used on coax). In a balanced line both wires are electrically equal. In an unbalanced line one wire has different electrical properties than the other.
Baud	Unit of measure for the speed of data transmission.
Bilinx	A communications protocol that allows remote control, configuration, and updates to be performed over the video cable (Coax or Passive UTP).
Bilinx address	The address may be set locally using the Bilinx Configuration Tool for Imaging Devices (CTFID) or remotely using the Fast Address function (see Fast Address).
Biphase	Pan/Tilt/Zoom protocol for Bosch products.
Bit/s	Bits per second, the actual data rate.
BLC	Back Light Compensation: Selectively amplifies parts of the image to compensate for large contrast differences when only a portion of the image is brightly lit (e.g. a person in a sunlit doorway).

C

Cable Category	Application and bandwidth rating system for UTP cabling. Categories 1 through 7 are based on EIA/TIA-568-B standards. Category is typically abbreviated CAT. UTP Category 5, 5e, 6, and 7 are used for Ethernet data cabling applications. Ethernet wiring distances are limited to a maximum of 100 m (328 ft.) when using UTP wiring.
Cable Compensation	A technology that prevents image degradation caused by signal losses when transmitting video over long cable lengths.
CCD	Charged Coupled Device: A type of solid state image sensor used in CCTV cameras. The sensor converts light energy into electrical signals.
CCD Format	Indicates the size of the camera sensor used. In general, the larger the sensor, the more sensitive the camera and the better the image quality. The format is quoted in inches, for example 1/4 or 1/3 inch.
CCTV	Closed Circuit TeleVision: A video system that transmits television signals over a closed (non-broadcast) system.
CF	CompactFlash: Digital storage media - used in computers, digital cameras, and Personal Digital Assistants (PDA) in the form of CF cards.
CIF	Common Intermediate Format: Video format with 352 × 288/240 pixels.
Color Temperature	A measure of the relative color of illumination. Generally used to specify the color balance correction of a camera to achieve a natural color image.
CTFID	Configuration Tool for Imaging Devices: Bosch software used to configure and update cameras and other remote devices over video cable using Bilinx, and to save them for later use.

CVBS Composite Video Blanking and Sync: The format of an analog television (picture only) signal before it is combined with a sound signal and modulated onto an RF carrier. Composite video is often designated by the CVBS acronym, meaning any of Color, Video, Blank, and Sync, Composite Video Baseband Signal, Composite Video Burst Signal, or Composite Video with Burst and Sync. It is usually in a standard format such as NTSC, PAL, or SECAM.

D

Day/Night (IR sensitive)

A camera that has normal color operation in situations where there is sufficient illumination (day conditions), but where the sensitivity can be increased when there is little light available (night conditions). This is achieved by removing the infrared cut filter required for good color rendition. The sensitivity can be further enhanced by integrating a number of frames to improve the signal-to-noise ratio of the camera.

Default Shutter

A feature allowing the shutter speed to be set to a fast speed to eliminate motion blur and provide a detailed and clear image of fast-moving objects while there is sufficient light. When light levels fall and other adjustments have been exhausted, the shutter speed reverts to the standard setting to maintain sensitivity.

DHCP

Dynamic Host Configuration Protocol: Uses an appropriate server to enable dynamic assignment of an IP address and other configuration parameters to computers on a network (Internet or LAN).

Digital Image Stabilization

See Image Stabilization

Dinion

A high-performance, smart surveillance camera series designed by Bosch utilizing 10 and 15-bit digital video processing.

Divar

The Bosch Divar digital video recorder (DVR) series are compact, low profile units that combine advanced digital recording and multiplexing.

DNR

Dynamic Noise Reduction: A digital video processing technique that measures the noise (image artifacts) in the picture and automatically reduces it.

DNS

Domain Name System: A service that stores domain names and translates them into Internet Protocol (IP) addresses.

Duplex

Term used to define the direction of data transmission between two parties. Half-duplex allows data transmission in both directions but not simultaneously. Full-duplex allows simultaneous data transmission.

E

Ethernet

The most commonly used local area network (LAN) access method. Ethernet complies with the IEEE 802.3 standard. The Ethernet standard supports 10 Mbps, 100 Mbps, 1000 Mbps, and 10 Gb (Gigabit) data transmission rates.

EnviroDome

Camera with environmental protection that allows it to be used outdoors in almost any climate.

F

F-Number	The standard measure of the lens aperture, which is the iris diameter, divided by the focal length of the lens. The lower the maximum aperture (F-Number or F-Stop), the more light that passes through the lens.
F-Stop	See F-Number
Fast Address	A system for setting the address of the camera remotely from the control system.
Fiber Optic Transmission	Refers to the transmission of video and data via optical fibers. Optical fibers are thin glass strands that are designed for light wave transmission. Video and data are digitized and transformed into a series of light pulses. There are two primary types of optical fiber; singlemode and multimode. Singlemode fiber is used when large distances must be spanned, typically greater than 2 Km/1.2 miles (see Singlemode). Multimode is typically used to span smaller distances such as the inside of buildings or on small campuses (see Multimode).
Field of View	The measure of the visible area within the camera's field of view. The larger the focal length, the smaller the field of view. The smaller the focal length, the wider the field of view.
FlexiDome	Fixed compact cameras in surveillance domes with economical, indoor models and high-performance, vandal resistant styles.
Focal Length	The distance from the optical center of the lens to the image of an object located at an infinite distance from the lens. Long focal lengths give a small field of view (e.g. telephoto effect), while short focal lengths give a wide angle view.
FTP	File Transfer Protocol: Used to transfer files between computers on a network, such as the Internet.
Full duplex	Simultaneous data transmission in both directions (sending and receiving); (see Duplex).
Frame	A single video image.
Frame rate	See IPS

G

Gateway Address	A node on a network that serves as an entrance to another network.
GBIC	GigaBit Interface Converter: Applied in network technology to render interfaces flexible, i.e. converting an electrical interface into an optical interface. This enables flexible operation of an interface as a Gigabit Ethernet via twisted-pair cables or fiber optic cables.
GoP	Group of Pictures: In MPEG video encoding, a group of pictures, or GoP, specifies the order in which intra-frames and inter-frames are arranged.
Guard Tour	Allows recorded tours with a combined duration of 15 minutes. Recorded tours consist of control commands and can be played back as needed. All camera position information is stored for maximum flexibility (including pan, tilt, zoom, etc.).

H

HTTP	Hypertext Transfer Protocol: Protocol for transmitting data over a network.
HTTPS	Hypertext Transfer Protocol Secure: Encrypts and authenticates communication between Web server and browser.

Hybrid Streaming	The ability to simultaneously stream IP video across a local or wide area network, and CVBS video via coaxial or fiber optic cabling.
I	
ICMP	Internet Control Message Protocol: One of the core protocols of the Internet protocol suite. It is chiefly used by networked computers' operating systems to send error messages indicating, for instance, that a requested service is not available or that a host or router could not be reached.
ID	Identification: A machine-readable character string.
IEEE	Institute of Electrical and Electronics Engineers: The world's leading professional association for the advancement of technology.
IEEE 802.1x	The IEEE 802.1x standard provides a general method for authentication and authorization in IEEE-802 networks. Authentication is carried out via the authenticator, which checks the transmitted authentication information using an authentication server (see RADIUS server) and approves or denies access to the offered services (LAN, VLAN, or WLAN) accordingly.
IGMP	Internet Group Management Protocol: A communications protocol used to manage the membership of Internet Protocol multicast groups.
Image Stabilization	An algorithm that virtually eliminates camera shake in both the vertical and horizontal axes, resulting in exceptional image clarity.
Infrared Illumination	Electromagnetic radiation (light) with a longer wavelength than is visible to the human eye. IR illumination is prominent at dusk and dawn and in incandescent lamps. IR illuminators come in the form of lamps with the appropriate filters, LEDs, or lasers. CCD sensors are less sensitive to IR than visible light, but IR can significantly increase the total illumination level, leading to a much better image at low light levels.
Intermodal Dispersion	See Modal Dispersion
IP	Internet Protocol: The main protocol used on the Internet, normally in conjunction with TCP (Transfer Control Protocol); (see TCP/IP).
IP 66	IP code (Ingress Protection) that indicates the degree of protection provided by enclosures for electrical equipment. The first number indicates protection of internal equipment against the ingress of solid foreign objects. The second number indicates protection of internal equipment against harmful ingress of water. Higher digits refer to higher levels of protection. See also NEMA Rating.
IP Address	The address of a device attached to an IP network. Each device on an IP network must use a unique address. Every IP data packet contains a source address (sender) and a destination address (recipient). Each IP address consists of 32-bits that are arranged into four 8-bit octets (x.x.x.x). IP addresses range from 0.0.0.0 to 255.255.255.255.
IPS	Images per Second: a measurement of the rate that pictures are displayed to create a video stream. A rate of 25 IPS (PAL) or 30 IPS (NTSC) is generally considered to be full motion video.
IRE	Institute of Radio Engineers: A measurement of video amplitude that divides the area from the bottom of sync to peak white level into 140 equal units - 140 IRE equals 1V peak-to-peak. The range of active video is 100 IRE. The institute itself was founded 1912 in New York City, merged to form IEEE in 1957.

iSCSI	Internet Small Computer System Interface: Protocol that manages storage via a TCP/IP network. iSCSI enables access to stored data from everywhere in the network.
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ISDN	Integrated Services Digital Network: Comprised of digital telephony and data-transport services offered by regional telephone carriers. ISDN involves the digitization of the telephone network, which permits voice, data, text, graphics, music, video, and other source material to be transmitted over existing telephone wires.
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J

JPEG	Joint Photographic Experts Group: The name of the committee that created a standard for encoding still images.
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K

kBit/s	Kilobits per second: The actual data rate.
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L

LAN	<i>Local Area Network</i> : A communications network serving users within a limited geographical area, such as a building or a university campus. It is controlled by a network operating system and uses a transfer protocol.
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LUN	Logical Unit Number: Logical drive in iSCSI storage systems.
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Lux	The International System Unit (<i>see</i> SI) of measurement of the intensity of light. It is equal to the illumination of a surface one meter away from a single candle.
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M

MAC	Media Access Control: A quasi-unique identifier attached to most network adapters (NICs). It is a number that acts like a name for a particular network adapter.
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MIB	Management Information Base: A collection of information for remote servicing using the SNMP protocol.
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MJPEG	Motion JPEG is a digital video encoding standard where each video frame is separately compressed into a JPEG image.
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Modal Dispersion	A broadening of a waveform over long distances. Modal Dispersion (or Intermodal Dispersion) occurs in multimode fibers, because light is bounced down different reflective paths (e.g. modes) in the fiber. As the distance increases, the path (mode) begins to spread and the arrival time for the different light rays begins to vary. A large variance (dispersion) increases the chance that the optical receiver may interpret the incoming signals incorrectly. Modal dispersion is a major problem with multimode fibers.
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MPEG-4	A further development of MPEG-2 designed for transmitting audiovisual data at very low transfer rates (for example over the Internet). A digital video encoding and compression standard that uses interframe encoding to significantly reduce the size of the video stream being transmitted. With interframe coding, a video sequence is made up of keyframes that contain the entire image. In between the keyframes are delta frames, which are encoded with only the incremental differences. This often provides substantial compression because in many motion sequences, only a small percentage of the pixels are actually different from one frame to another.
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Multimode Fiber	An optical fiber with a larger core (typically 50 or 62.5 microns) than singlemode fiber (<i>see</i> Singlemode Fiber). The core is made of plastic or glass fibers. It is the most commonly used fiber for cabling short distances as used in LANs. The name multimode comes from the fact that light rays travel down multiple reflective paths (modes) within the fiber. This allows light to enter the core at different angles, making it easier to connect to broader light sources such as LEDs (light emitting diodes). Fiber optic interfaces and multimode fiber-based transmission systems are less expensive than those based on singlemode fiber. However, the use of multiple reflective paths (modes) increases modal dispersion (<i>see</i> Modal Dispersion) and shortens the distances that this type of fiber optic transmission system can span.
Multi-Protocol	A convention or standard that controls or enables the connection, communication, and data transfer between two devices. In PTZ cameras, such as the AutoDome and Pan/Tilt units, protocol refers to the standard used to control the pan, tilt, and zoom (PTZ) operation of the camera. Since each camera manufacturer's PTZ protocols are unique, multi-protocol support is needed to support third party systems. AutoDome cameras support the Pelco D and P protocols as well as Bosch's own Biphase protocol (<i>see</i> Biphase). The Pan/Tilt units support the Pelco "D" protocol as well as Bosch's own Biphase and Bilinx protocols (<i>see</i> Bilinx).

N

NEMA Rating	Electrical Standards and Publications published by NEMA (National Electrical Manufacturers Association). Specification standards in reference to the operating environment for a variety of electrical devices.
Net mask	A mask that explains which part of an IP address is the network address and which part is the host address. It is usually written in dotted decimal notation, for example 255.255.255.192 (<i>see also</i> Subnet Mask).
NightSense	A method of boosting the sensitivity of high-resolution Bosch color cameras by 9 db (a factor of 3) by combining the signal of the color image in a single monochrome picture.
NPT	National Pipe Thread: A U.S. standard for tapered threads. NPT sizes measure the nominal inside diameter of the pipe. NPT threads form a seal as the threads compress against each other.
NTP	Network Time Protocol: A standard for synchronizing computer system clocks via packet-based communication networks. NTP uses the connectionless network protocol UDP (<i>see</i> UDP). This was developed specifically for enabling time to be reliably transmitted over networks with variable packet runtime (Ping).

O

OSD	On-screen Display: Menus are shown on the display monitor.
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P

Pan	Camera movement in the horizontal direction.
Parameters	Values used for configuration.
Pixel	The smallest addressable unit on a display screen or bitmapped image.
Port	1) On computer and telecommunication devices, a port (noun) is generally a specific place for being physically connected to some other device, usually with a socket and plug of some kind.

Typically, a personal computer is provided with one or more serial ports and usually one parallel port. 2) In programming, a port (noun) is a logical connection place and specifically, using the Internet protocol TCP/IP, the way a client program specifies a particular server program on a computer in a network. Higher-level applications that use TCP/IP, such as the Web protocol Hypertext Transfer Protocol, have ports with preassigned numbers. These are known as well-known ports that have been assigned by the Internet Assigned Numbers Authority (IANA). Other application processes are given port numbers dynamically for each connection. When a service (server program) initially is started, it is said to bind to its designated port number. As any client program wants to use that server, it also must request to bind to the designated port number. Port numbers are from 0 to 65535. Ports 0 to 1024 are reserved for use by certain privileged services. For the HTTP service, port 80 is defined as a default and it does not have to be specified in the Uniform Resource Locator (URL).

Pre-Position	A pre-selected and stored combination of pan, tilt, and zoom positions that allow a set view to be recalled. Also known as Preset Shot.
Preset Tour	A sequence of preset shots combined to provide a pre-programmed tour of the area covered by a programmable camera.
Pressurized Dry Nitrogen Housing	A housing for outdoor applications that protects against smog, humidity, dirt, and dust.
Privacy Masking	The ability to mask out a specific area to prevent it from being viewed.

Q

QCIF	Quarter CIF: Video format with 176 × 144/120 pixels (<i>see</i> CIF).
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R

RAID	Redundant Array of Independent Disks: Used for organizing two or more hard disks as if they were one drive. On such a drive data is shared or replicated. This is used to achieve greater capacity, reliability, and speed.
RADIUS Server	Remote Authentication Dial-In User Service: A client/server protocol for the authentication, authorization, and accounting of users with dial-up connections on a computer network. RADIUS is the de-facto standard for central authentication of dial-up connections via a Modem, an ISDN, a VPN, a Wireless LAN (<i>see</i> IEEE 802.1x), and a DSL connection.
Region of Interest	A specific area within a field of view, used by the motion detection algorithm to identify motion.
Resolution	The measure of the fine detail that can be seen in an image. For analog systems this is typically measured in Television Lines or TVL. The higher the TVL rating, the higher the resolution.
RFC 868	A Request For Comment protocol for synchronizing computer clocks over the Internet.
RS232/RS422/RS485	Recommended standards for serial data transmission. A communication interface for third party control, firmware upgrades, and service purposes for camera and DVR products.
RTP	Realtime Transport Protocol: A transfer protocol for real-time video and audio.
Rule	An alarm management subsystem that uses rules to perform specific actions when an event occurs.

S

Sector blanking	The ability to blank out video in any number of the pan sectors.
Sensitivity	A measure of the amount of light required to provide a standard video signal. Sensitivity values are stated in lux (<i>see</i> Lux) or foot-candles.
SensUp	Ups (increases) camera sensitivity by increasing the integration time on the CCD. This is accomplished by integrating the signal from a number of consecutive video frames to reduce signal noise.
SFP	Small Form-factor Pluggable: A small, standardized module for network connections; designed as a plug connector for high-speed network connections.
SI	International System of Units (abbreviated SI from the French <i>Le Système international d'unités</i>): The world's most widely used system of units, both in everyday commerce and in science.
Singlemode Fiber	An optical fiber with a silica (or glass) core with a diameter of less than 10 microns. Used for high-speed transmission over long distances, it provides greater bandwidth than multimode (<i>see</i> Multimode Fiber), but its smaller core makes it more difficult to couple the light source. Singlemode fiber optic transmission systems use more expensive laser-based light sources.
SNIA	Storage Networking Industry Association: Association of companies for defining the iSCSI standard.
SNMP	Simple Network Management Protocol: IP based protocol for network management, as well as managing and monitoring network components. SNMP allows getting information from networking devices (GET), to set parameters on network devices (SET), and to be notified about certain events (EVENT).
SNTP	Simple Network Time Protocol: A simplified version of NTP (<i>see</i> NTP).
Spot Focus	Activates Auto Focus for three seconds after camera movement.
Subnet mask	Subnetting is a method that allows one large network to be broken down into several smaller ones. IP addresses are grouped by something called a subnet mask. Every IP address has a corresponding subnet mask. The subnet mask specifies the range of the IP addresses in a group. The subnet mask looks a lot like an IP address. It is made up of four eight-bit numbers separated by periods. These numbers once again range from 0 to 255. A typical subnet mask is 255.255.255.0.

T

TCP/IP	Transmission Control Protocol/Internet Protocol: a communications protocol suite that provides two data transport methods. TCP is a connection-based protocol that ensures that data arrives intact and complete. UDP is a connectionless, best effort protocol that simply sends out packets. UDP is typically used for streaming media, while TCP is used when error-free delivery is required.
Telnet	Log in protocol with which users can access a remote computer (Host) on the Internet or local area network (LAN) connections.
Tilt	Camera movement in the vertical direction.
TLS	Transport Layer Security: TLS 1.0, 1.1, and the standard advanced developments of SSL 3.0 (Secure Sockets Layer, the predecessor to TLS).

Tri-streaming	A Bosch encoding technology that generates two separate MPEG-4 video streams and one MJPEG stream simultaneously. This advanced streaming capability enables the user to tune live viewing and recording requirements independently to meet specific site and enterprise requirements.
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TTL	Time-To-Live: Life cycle of a data packet in station transfers.
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U

UDP	User Datagram Protocol: One of the core protocols of the Internet Protocol suite. Using UDP, programs on networked computers can send short messages, sometimes known as datagrams, (using Datagram Sockets) to one another. UDP is sometimes called the Universal Datagram Protocol.
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URL	Uniform Resource Locator: Previously Universal Resource Locator. The unique address for a file that is accessible on the Internet.
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UTP	Unshielded Twisted Pair: A variant of twisted pair cabling, UTP cable is not surrounded by any shielding. The wires in a twisted pair cable are twisted around each other to minimize interference from the other twisted pairs in the cable. UTP is the primary wire type for telephone usage and the most commonly used type of networking cable.
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V

Virtual Masking	A unique Bosch technology that creates invisible motion masking areas. These invisible masks are similar to privacy zones but only the camera's algorithms can see them. This allows the camera to ignore areas of unwanted motion.
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VMD	Video Motion Detection: An algorithm for motion detection in which the camera compares the current image with a reference image and counts the number of pixels (see Pixel) that have changed between the two images. An alarm is generated when the number of pixel changes exceeds a user-configured threshold.
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W

WAN	Wide Area Network: A long distance link used to extend or connect remotely-located local area networks.
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X

XF-Dynamic	A highly accurate, 15-bit digital signal processing technology from Bosch that extends the dynamic range of Dinion ^{XF} cameras. XF-Dynamic optimizes the detail in both the high and low light areas of the scene simultaneously, maximizing the information visible in the picture.
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Z

Zoom	Changing the effective focal length to allow different fields of view to fill the picture area. Zoom can be optical, where the lens is adjusted, or digital, where a portion of the view selected is magnified electronically.
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