

VIDEO SURVEILLANCE OVER IP

AXIS PRODUCTS OVERVIEW

Remote accessibility:

Access live video at anytime, from anywhere

You can access real-time video at any time from any computer anywhere. The video can be stored at remote locations for convenience and security, and the information can be carried over the LAN or Internet. This means that even companies with small, far-flung operations can make effective use of an IP-Surveillance solution for security or remote monitoring purposes.

Cost-effectiveness: Save money on start-up and maintenance

In a number of ways, network video is highly cost-effective: the existing cable infrastructure and standard PC hardware can be used, so start up costs are low. Similarly, the slim network-run equipment keeps maintenance costs low. In a network video solution, there is simply less equipment to maintain than in a traditional analog system, fewer parts that can wear out over time. Images are stored on computer hard disks, which is a neater, cheaper solution than VCR and tapes. Operational efficiencies and cost reductions are thus made because there is no longer a need to physically move and copy physical tapes.

Flexibility:

Put the cameras wherever you want

There are almost no limitations as to where you can place cameras. They are not tied to physical inputs or frame grabbers and you can connect the product to a LAN, xDSL, modem, wireless adapter or cell phone. Basically wherever you can receive a phone call on your cell phone, you can receive images from an Axis video product.

Scalability:

A system that grows with your needs

A network video solution can be expanded by simply adding cameras one by one, and quickly; on average it only takes a few minutes to get the product out of the box, connected and start sending images over the network. The largest system to date employs more than 2,000 cameras.

Integration and future-proof functionality:

Be on track for the future - Open standards for easy system integration and expansion

Network video technology has the capacity to provide a higher level of integration with other functions and services, making it a continually developing system. Use of open standard protocols and networks for communication enables easy system integration with equipment from a wide range of manufacturers. Changing over to digital technology means investing in a system that will last well into the future.

Digital quality:

Axis Superior Image Quality

Axis has ever since the development of network cameras first began, introduced a stream of image enhancing technologies and patents. One of our key goals is to continue to innovate and focus on our image quality market leadership. From a technical point of view, Axis' Superior Image Quality rests on three pillars:

- Advanced signal processing, image enhancement algorithms and video compression technologies.
- Custom-designed image processing and video networking chips.
- Careful selection and matching of the latest high-end image sensors and lenses.

Image quality is clearly one of the most important features of any camera, if not the most important. This is particularly so in surveillance and monitoring applications, where lives and property may be at stake. By developing image processing chips and sophisticated algorithms tailored for network camera applications, image quality has been improved to a degree never before seen at lower cost levels. As digital technology becomes commonplace and replaces analog solutions, there will be further advances in areas such as high resolution and advanced video compression, but success will ultimately depend on how well the initial information is captured and handled.



In the fast-growing segment of network cameras, which are used for surveillance and remote monitoring, there are many factors that influence image quality. Axis, which set the standards for network cameras in 1996, identified right from the start the need for advanced image handling, and has continued to invest in research in its Superior Image Quality initiative. Superior image quality enables the user to:

- more closely follow details and changes in images, making for better and faster decisions concerning the safety of people and property
- with greater accuracy use automated analysis and alarm tools, such as face recognition, with fewer false positives.

What aspects of good image quality should I look for?

Unlike traditional analog cameras, digital network cameras are equipped with the processing power not only to capture and present images, but also to digitally manage and compress them for network transport. Image quality can vary considerably and is dependent on the choice of optics and image sensor, the available processing power and the level of sophistication of the algorithms in the processing chip. To summarize, look specifically at:

The type of image sensor

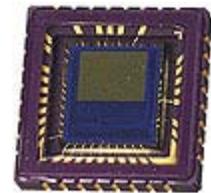
There are two types: CCD (Charged Coupled Device) and CMOS (Complementary metal oxide semiconductor) CCD sensors are produced using a technology developed specifically for the camera industry, while CMOS sensors are produced by the same technology used for the chips used in computers. Today's high quality cameras mostly use CCD sensors. Although recent advances in CMOS sensors are closing the gap, they are still not suitable for cameras where the highest possible image quality is required.



1/3-inch CCD

Low light capabilities

A camera might deliver reasonable image quality in bright light conditions, but it may be unsuitable for typical indoor situations.



1/4-inch CMOS
sensor

Lens replacement

A high quality lens can deliver better images. Most professional level cameras use a so-called C or CS mount, and some lenses feature auto-iris control for improving the dynamic range.

Image resolution

Higher resolution means more detail, and as cameras now deploy megapixel sensors, making it possible to capture even more detail, analog CCTV cameras, bound to the resolutions used in TV standards, are being surpassed.

File size and bandwidth requirements

Digital cameras use image compression. There is a trade off here between high quality images and compressed images that require much less bandwidth. The JPEG standard is used to achieve the highest possible quality, and MPEG is optimized for lower bandwidth requirements.

The ability to correctly capture moving objects

In addition to good light sensitivity, another key feature to look for is progressive scan. That the camera has progressive scan means that images do not suffer from the "saw" effect that hampers interlaced video technologies. The interlace mode is used in TV's and traditional analog CCTV cameras, in order to enhance the image frequency in moving images. The "saw" effect becomes apparent when the picture is frozen.

Additional image enhancements

The functions that drive these reside in the chip that handles the image processing, and affects color, sharpness, exposure and the white balance.

Why is Axis image quality superior?

Axis has ever since the development of network cameras first began, introduced a stream of image enhancing technologies and patents. One of our key goals is to continue to innovate and focus on our image quality market leadership.

From a technical point of view, Axis' Superior Image Quality rests on three pillars:

- advanced signal processing, image enhancement algorithms and video compression technologies
- our custom-designed image processing and video networking chips
- careful selection and matching of the latest high-end image sensors and lenses.

All told, this means that Axis has the best image quality in the world when comparing cameras in the same price range. Of course, you don't have to take our word for it - the best way to experience Axis' superior image quality is to test our cameras and see for yourself.

Multi-purpose solutions which let you address several key issues simultaneously

Installing a digital, network-based surveillance system also increases a company's opportunity to use video or images in other applications such as access control. Network cameras can take images when someone swipes a keycard for access to a secure area. This indicates that someone has entered the premises and verifies whether that person was indeed the authorized cardholder. Alarms can be verified, avoiding sending security staff at false alarms.

Power-over-Ethernet

Power over Ethernet is a technology that integrates data and power over standard LAN infrastructure. This enables reliable, uninterrupted power to network cameras, and other Ethernet devices, using the existing cable infrastructure. By utilizing the wires that normally go unused in standard "Cat5" network cables, Power over Ethernet feeds power directly to the network video products without the need for local powering of the camera. What's more, by connecting Power over Ethernet to uninterrupted power supplies, your network surveillance system will even continue to operate in the event of a power failure – making it the perfect solution for powering mission-critical systems.