



## IP camera security vs. Analog CCTV

Network IP Cameras have been around for at over a decade now. Only recently have cabling installers began to pay attention to the technology because surveillance cameras have traditionally run on separate coaxial cable. Around 10 years ago, the first digital IP camera connected directly to a data network which changed the future of the surveillance camera industry.

During the early stages, the technology was not as professional as analog cameras. Most cameras were seen as 'web cameras', which were used to view objects or events over the internet or a LAN.

Today IP network cameras meet the same requirements and specifications as analog counterparts and in many areas surpass analog camera performance and features. Forecasts show that the network IP camera market share is growing at a much faster rate than its analog competitor and has surpassed the analog camera in market share.

Analog as technology is static or 'dumb'. It lacks the flexibility and performance needed for today's digital world. Network cameras move analog signal conversion and compression out of and away from DVR systems. In this sense IP video is an 'intelligent' form of technology that can be scaled to handle thousands of cameras, with cost effective, industry standard servers for recording and storage. Many new 'intelligent' IP Cameras have a large range of advanced features built into the cameras which are simply not available through traditional offerings.

### **When converting to the new technology it is wise to look at some of the key differences between the technologies.**

**Interlacing:** Analog technology even at (4CIF) has a significant problem with interlacing which can cause moving objects to blur. A network camera can progressively scan moving objects more clearly. There are no separate interlaced lines, so this method provides a much clearer image.

**Security:** Because the digital signal from the camera is encrypted prior transmission the signal can not be intercepted by simply splicing into the cable as is the case with analog signals.

**Power:** Powering an analog camera can be costly and difficult. Firstly coaxial cable must be installed to transport the video then power cabling fed to each camera. Network cameras can be run from the Power over Ethernet (PoE) standard, which means cameras can be run over the same cable that transmits data and power.



**Ups Integration:** An additional advantage of using PoE enabled Cameras and LAN Switches that is often overlooked is the fact that protection against power loss can be implemented much more cost effectively and simply than for analog CCTV. Traditional analog CCTV cameras require power at each location, thus providing backup power for each camera can often be very expensive. However an IP camera system using PoE, power is injected centrally at the network switch thus one or two UPS's supplying that switch automatically provide backup power to all the cameras. Often it may be the same UPS already in place for the PC and Servers

**Resolution:** Analog cameras cannot provide resolution above television standards, which corresponds to 0.4 mega-pixels at 4CIF. Many analog systems run at a much lower resolution due to technical and cost restrictions, operating at 0.01 mega pixels. Network Video technology can provide a resolution up to 15 times the quality of analog video. The latest cameras now can process video up to 3Mbitp/s.

**Intelligence:** Network video technology allows the cameras to have a much higher range of 'built in' features. For example cameras can be programmed to only record on movement, vastly reducing network load. Other features include sun and backlight compensation, dual lenses technology, internal digital storage, audio and SIP telephony.

**Remote Access:** Since IP based cameras are based on proven network technology any video stream live or recorded can be securely accessed and controlled from location over a wired or wireless connection.

**Scalability:** From 1 camera to thousands of cameras in increments of a single camera. There are no 16 channel jumps as with analog technology. IP based technology also offers any frame rate at anytime.

**Infrastructure:** Only one type of network cabling connects and manages the enterprise network's data, voice and video. Making infrastructure management more effective and cost efficient.

**Built in intelligence at the camera level:** Motion detection, event handling, sensor input, relay output, time & date and other built in capabilities allow the camera to make intelligent decisions on when to send alarms and whom, when to send video, and even at what frame rate or resolution to send the video.

IP Video is a proven technology that has many advantages over traditional analog CCTV systems. IP technology is very easy to upgrade and expand. With the introduction of new technology, developing IP surveillance systems will become more 'intelligent' and give greater return on investment.