



Technical Overview

NETWORK CAMERAS

AXIS 2420 NETWORK CAMERA

AXIS 2420 Network Camera

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Rev 1.1

1 The AXIS 2420 Overview

1.1 Fundamentals

The AXIS 2420 Network Camera is a complete network camera for direct attachment to Ethernet networks or modem links and features:

- Built-in digital camera
- Ethernet attachment
- Modem attachment through RS-232
- Built-in web server for viewing and administration.

1.2 System Overview

The system overview below (figure 1) shows the main functional blocks of the AXIS 2420 giving a picture of what elements that are passed for an image to be picked up by the camera and until the viewer can see the image in his or her web browser.

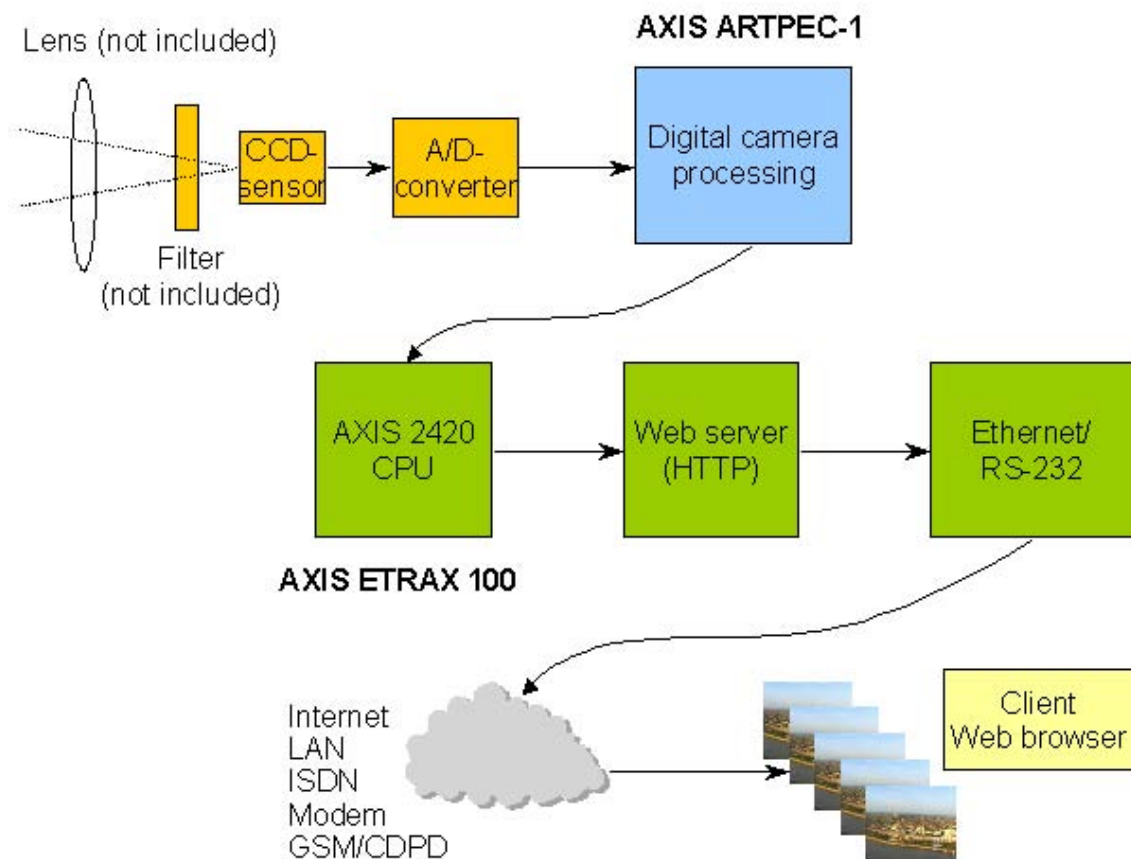


Figure 1. System overview of AXIS 2420 Network Camera

1.3 System Details

The hardware core of the AXIS 2420 is the AXIS ETRAX 100LX chip which includes CPU, Ethernet interface, memory controllers, device interfaces and much more, and the AXIS ARTPEC-1 chip containing the JPEG compression technology.

The available amount of memory is 4 MB of Flash (whereof 2 MB is available customer applications and html code) and 16 MB of RAM (whereof 4 MB is available for pre- and post-alarm buffers).

The software is entirely built on the Linux operating system and the program code is stored in a compressed format in flash, as well are, non-volatile parameters, and customer scripts and html code. The decompressed program code, temporary parameters and alarm buffer are stored in RAM.

The camera module is based on the 1/3" Sony EXview HAD interlaced CCD and features:

- Digital 24-bit color
- NTSC or PAL color system
- Pixels 768 x 494 (NTSC), 752 x 582 (PAL)
- Backlight compensation
- Automatic Gain Control
- Automatic and fixed white balance
- Electronic shutter 1/60 s – 1/10000 s
- Illumination 1 – 200000 Lux with F1.0 lens

1.4 Compression Technology

The image compression used by the AXIS 2420 is JPEG, which at a video frame rate is often referred to as Motion-JPEG. The Axis compression chip, ARTPEC-1, allows 2 different resolutions and 5 different levels of compression. Resulting images sizes are normally between 3 kB and 52 kB depending on image complexity, resolution and compression.

The frame rate with a resolution of 352 x 240 (NTSC) and 352 x 288 (PAL) is up to 30 fps (NTSC) and 25 fps (PAL).

With a resolution of 704 x 480 (NTSC), 704 x 576 (PAL), the frame rate is up to 12 fps (NTSC) and 10 fps (PAL).

1.5 Alarm Events

An alarm can either be triggered through the built-in motion detection (up to three windows can be defined), or through an external digital alarm input on the terminal block at the back of the AXIS 2420.

When an alarm has been triggered an e-mail alert can be sent, or images in the so-called alarm buffer can be sent as attachments to an e-mail or by being uploaded to an FTP server. In addition customers may define their own actions by writing a customer application as a PHP script.

1.6 Pre- and Post Alarm buffer

When an alarm has occurred, the AXIS 2420 is capable of sending (by e-mail or FTP upload) images from before the actual alarm event. This is made possible by a buffer within the AXIS 2420, which constantly stores images using the FIFO (First In First Out) methodology.

The size of the buffer is 4 MB, which means that, for example, around 300 images of the size 13 kB can be stored. Upon an alarm, 150 images from just before the alarm and 150 images from right after the alarm will be transferred by e-mail or FTP upload. Image transfer is started when all 300 images are available in the buffer.

During the time an alarm is handled, i.e. until the transfer is completed, any new alarm during that time is ignored.

If a new alarm occurs after a previous alarm has completed, but before the buffer is filled with new images, then the new alarm will transfer less pre-alarm images than normally.

1.7 External Connectors

At the back panel of the AXIS 2420 the following connectors are available:

- Power connector for DC/AC in and alternative power connector on terminal block
- RJ-45 for Ethernet 10/100
- BNC for analogue video out
- RS-232 for modem
- RS-485 for external device control
- DC-Iris lens connector
- Relay output control.

1.8 Dimensions and Weight

The W x L x H is 3.3" x 5.9" x 2.2" and the unit weight is 1.03 lb.

1.9 More Information

The best source for more information is the User's Manual found on the camera product pages:

http://www.axis.com/products/camera_servers/index.htm

For developer related information, for example the HTTP API, please see:

http://www.axis.com/techsup/cam_servers/dev/index.htm