AXIS IP Camera/Video Server (FTI06019)

Software Installation Manual

Publication type:	Axis Software Installation Manual
Publication number:	FTI06019
Title:	AIS IP Camera
Subject:	
Issue:	1.1.15
Publication date:	20 November 2013
Total number of pages:	29

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References

AXIS Video Server Installation Guide
http://www.axis.com/files/manuals/ig_241x_28586_en_0207.pdf

AXIS 241Q Video Server User's Manual
http://www.axis.com/files/manuals/um_241q_241s_32079_en_0901.pdf

Introduction

The software installation manual provides instructions for setting, adjusting and/or configuring the AXIS IP Camera as used within FT NavVision®. The chapters and sections are organized in chronological order in which the specific components must be installed and monitored (where applicable).

NOTE:

- *This section provides only a summary of the most important safety requirements and notes, which will be mentioned in the individual sections. To protect your health and prevent damage to the devices, it is essential to read and carefully follow the safety instructions.*
- *The installation manual is addressing the installation and maintenance personnel responsible for taking the AXIS IP Camera into normal service and out of service.*
- *The installation personnel must have a basic knowledge in handling electronic equipment. The maintenance personnel must be well experienced in using protection equipment and test equipment.*

About the installation manual

The software installation manual contains the following chapters:

- Chapter “Safety instructions” presents warning, caution and note information, which the user should pay attention to.
- Chapter 1 “Receiving, unpacking and checking” contains instructions on how to receive, unpack or check the system.
- Chapter 2 “Setting and adjustment” contains information on how to configure the IP Camera system
- Chapter 3 “Technical specifications” contains an overview of the main technical data.

Abbreviations list

AC	Alternating Current
API	Application Programming Interface
ARP	Address Resolution Protocol
ASF	Advanced Systems Format
AWG	American Wire Gauge
BNC	Bayonet Neill-Concelman
CAN	Controller Area Network
CBR	Constant Bit Rate
CIF/QCIF	Common Intermediate Format/Quarter CIF
CTS	Clear To Send
cUL	UL mark for Canada
DC	Direct Current
DHCP	Dynamic Host Configuration Protocol
DIN	Deutsches Institut für Normung
DIP	Dual In-line Package
DNS	Domain Name System
DTR	Data Terminal Ready
DynDNS	Dynamic Network Services
EEPROM	Electrically Erasable Programmable Read-only Memory
EMC	Electromagnetic Compatibility
EN	European Union/European standard (Europese norm)
ESD	Electrostatic Discharge
FCC	Federal Communications Commission
FT	Free Technics
FTP	File Transfer Protocol
GND	Ground
HTTP(S)	Hypertext Transfer Protocol (Secure)
ICES	Interference-Causing Equipment Standard
ICMP	Internet Control Message Protocol
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IGMP	Internet Group Management Protocol
IM	Installation Manual
I/O	Input/Output
IP	Ingress Protection / Internet Protocol
ISO	International Organization for Standardization
JPEG	Joint Photographic Experts Group
LAN	Local Area Network
LED	Light Emitting Diode
MIB	Management Information Base
MPEG	Motion Picture Editors Guild
NTP	Network Time Protocol
NTSC	National Television System Committee
OS	Operating System

PAL	Phase Alternate Line
PLC	Programmable Logic Controller
PTZ	Pan, Tilt and Zoom
QoS	Quality of Service
RCA	Radio Corporation of America
RH	Relative Humidity
RISC	Reduced Instruction Set Computer
RJ	Registered Jack
RTC	Real Time Clock
RTP	Real Time Transport
RTCP	RTP Control Protocol
RTSP	Real Time Streaming Protocol
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SOCKETS	Internet protocol
SSL/TLS	Secure Sockets Layer/Transport Layer Security
TCP	Transmission Control Protocol
TX	Transmission
TxD	Transmitted Data
UDP	User Datagram Protocol
UL	Underwriters Laboratories Inc. (product safety certification)
UPnP	Universal Plug and Play
VCCI	Voluntary Control Council for Interference by Information Technology Equipment
VBR	Variable Bit Rate

Revision history

Revisions issued since publication.

Issue	Date	Revision	Reason
1.0	01-01-2011		First release
1.1.15	20-11-2013	Adjustments	

Safety instructions

The indications NOTE, CAUTION and WARNING have the following significance:

NOTE:
An operating procedure, practice or condition etc., which it is essential to emphasize.

CAUTION

An operating procedure, practise or condition etc., which, if not strictly observed, may damage or destroy equipment.

WARNING

An operating procedure, practise or condition etc., which, if not carefully observed may result in personal injury or loss of life.

CAUTION

- **When the device is installed on the wall or ceiling, make sure that it is firmly attached**
- **Make sure that the power supply is correct before using the camera**
- **Do not drop the device or expose it to physical shock**
- **Do not expose to temperatures outside the range of 5 – 50°C when the device is in operation**
- **Do not expose the device to wet/damp conditions or high electromagnetism radiation**
- **Avoid heat accumulation, make sure that the operating environment has proper ventilation**
- **Do not attempt to open, disassemble, or modify the system.**

1. Receiving, unpacking and checking

1.1 Procedure

NOTE:
Notify your sales representative if any of the items mentioned below are missing or damaged.

1. Remove the transport casing

2. Visually inspect the respective parts

3. Check that all items are included in accordance with the delivery documents.

4. Check for transport damages.
   In case of transport damage appropriate action must be taken against the latest carrier and the nearest certified dealer or representative should be informed.

5. Store the part in the original transport package in a dry and dust free place, if the unit is not to be installed immediately. Observe the environmental requirements stated in the specifications

2. Setting and adjustment

2.1 Configuring the video server

The AXIS 241Q can be used with most standard Operating Systems (OS) and web browsers. The recommended browser is Internet Explorer with Windows, and Mozilla with other Operating Systems.

2.2 Setting the password

1. When accessing the AXIS video server for the first time, the “Configure Root Password” dialog will be displayed on the screen (see Figure 2-1).
2. Enter a password and then re-enter it, to confirm the spelling. Click “OK”.
3. The “Enter Network Password” dialog will appear. Enter the User name: “root”
   NOTE: The default administrator user name root is permanent and cannot be deleted.
4. Enter the password as set in step 2 above, and click “OK”. If the password is lost, the AXIS video server must be reset to the factory default settings.
5. If required, click “Yes” to install AMC (AXIS Media Control), to allow viewing of the video stream in your browser. You will need administrator rights on the computer to do this.
6. The “Live View” page (see Figure 2-2) of the AXIS video server is displayed; complete with links to the Setup tools, which allow you to customize the camera to your specific needs.

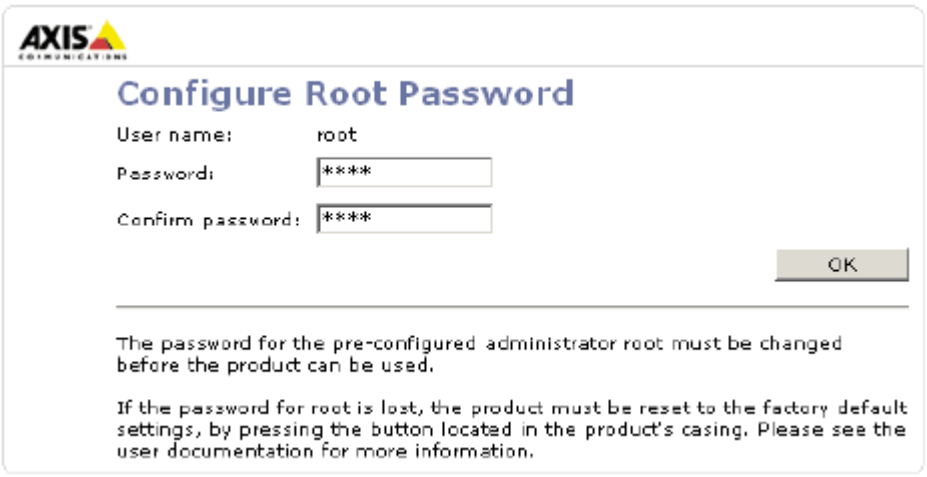

Figure 2-1: Configure root password screen

2.3 Resetting to the factory default settings

This will reset all parameters, including the IP address, to the factory default settings:

1. Disconnect power from the Axis Video Server.
2. Press and hold the control button and reconnect power.
3. Keep the button pressed until the status indicator displays yellow (this may take up to 15 seconds), then release the button.
4. When the Status indicator displays green (which can take up to 1 minute) the Axis Video Server is reset to the factory default settings.
5. Re-install the Axis Video Server using one of the methods described in this document.

2.4 Accessing the video server

1. Start your browser
2. Enter the IP address or host name of the AXIS in the “Location/Address” field of your browser
3. Enter the user name: “root” and password: “root” set by the administrator
4. The “Live View” page is displayed in your browser (see Figure 2-2).

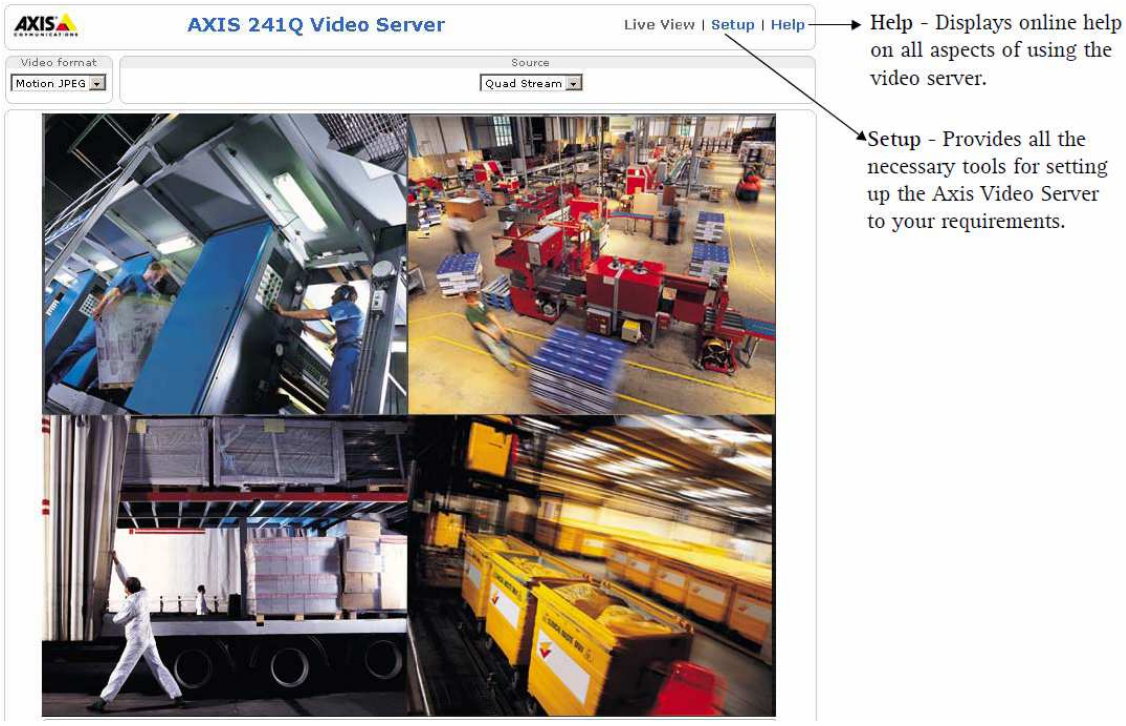

Figure 2-2: Live view page

2.5 Video and image settings

2.5.1 Basic configuration > Image

In “Basic configuration > Video & Image > Video 1 > Image” (see Figure 2-3) modify the following:

- Delete check mark at “4CIF de-interlacing
- Set image appearance to CIF (352 x 240/352 x 288)
- In “Video Stream > Maximum frame rate” set to “Limited to 5 fps per viewer
- Click “Save”.

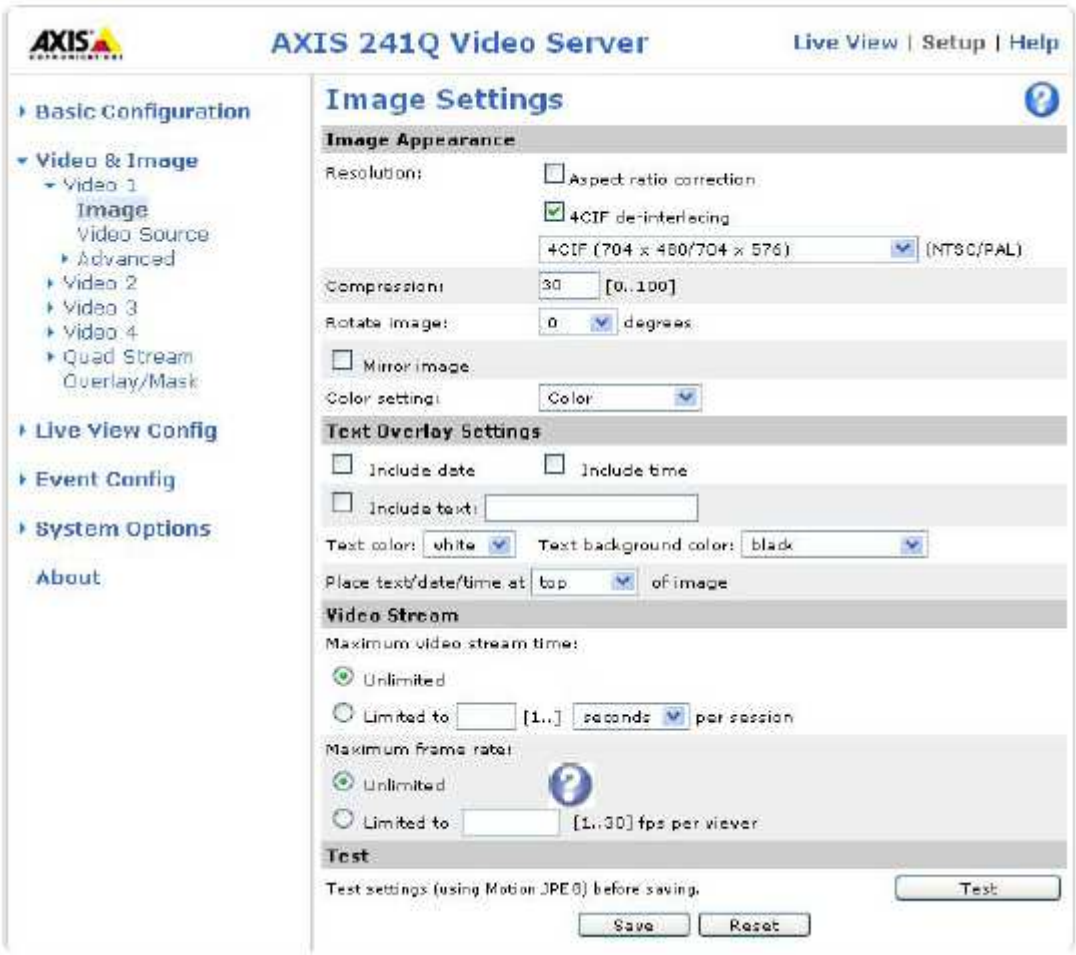

Figure 2-3: Basic configuration > Image

: *Do this also for the other video sources. Do not forget to save after each change.*

Basic configuration > Users

In “Basic configuration > Users” (see Figure 2-4) please choose the following settings:

- In “Users > HTTP/RTSP Password Settings” change “Allow password type:” into “Encrypted & Unencrypted”
- In “Users > User Settings” set a check mark at “Enable anonymous viewer login (no user name or password required)”.

Figure 2-4: Basic configuration > Users

2.5.2 Basic configuration > TCP/IP

In “Basic configuration > TCP/IP > IPv4 Address Configuration” (see Figure 2-5) choose the following settings:

- Put a check mark at “Enable IPv4”
- Mark the “Use the following IP address” and if required alter the IP address, Subnet mask and Default router settings.

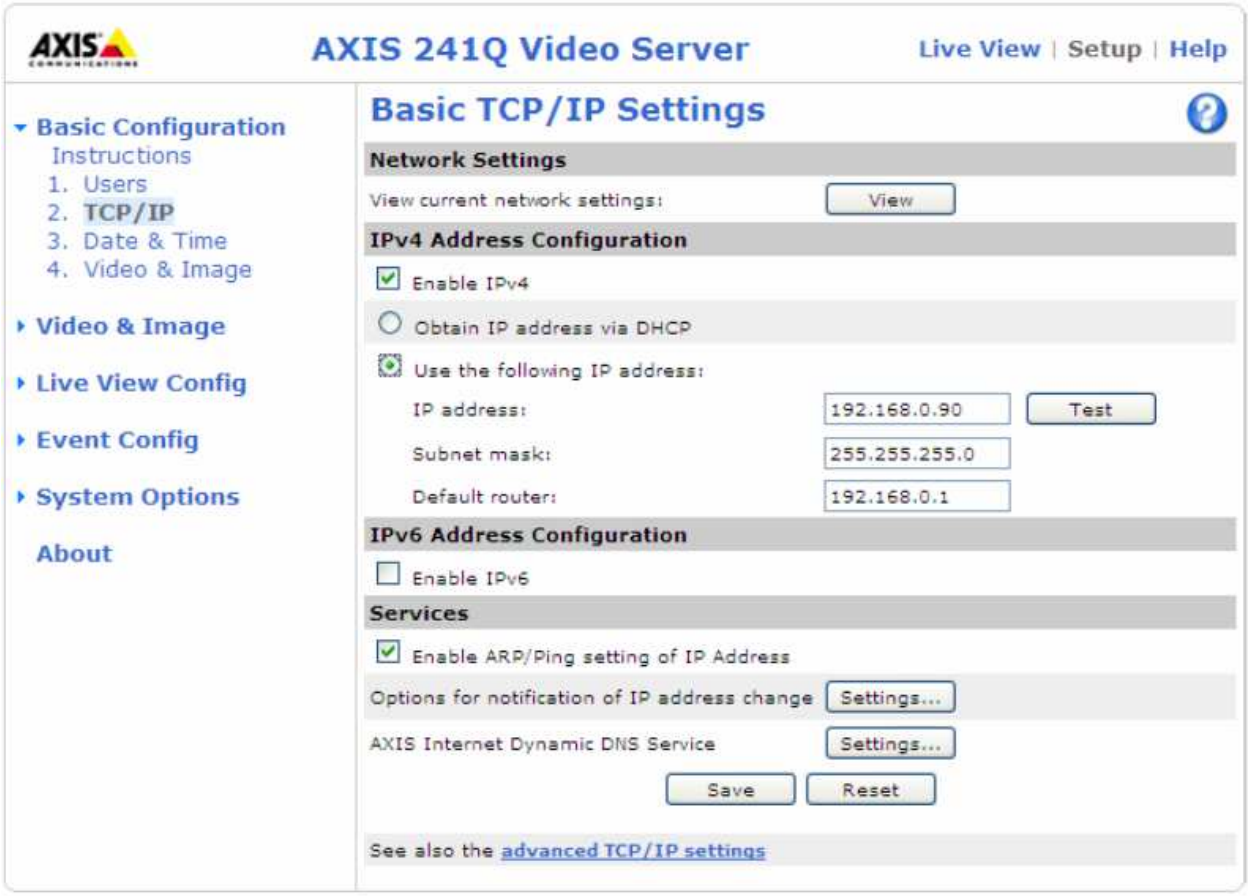

Figure 2-5: Basic configuration > TCP/IP

2.5.3 Image appearance

Modify the “Image appearance” to optimize the video images according to your requirements - select CIF (352 x 240/352 x 288). You can also rotate and mirror images.
All configurations of images and overlays will affect the performance of the video server, depending on usage and the available bandwidth.

- High resolution generates larger files
- Lower compression improves image quality, but generates larger files
- Black & White uses less bandwidth than colour
- Rotating the image 90° or 270° will lower the maximum frame rate.

2.5.4 Text Overlay Settings

Include date, time, and/or text of your choice to be viewed on the image. The text field can be used to display various information e.g. bit and frame rates.
To display the bit rate (in MBit/s), type “#B MBit/s” in the text field. For more information, please refer to the online help. The colour of the text may be set to white or black, while background colour may be set to white, black, transparent or semitransparent. The position of the text is set either to the top or the bottom of the image.

2.5.5 Video stream

The maximum video stream time can be set as “Unlimited”, or set a maximum stream time per session in seconds, minutes or hours. When the set time has expired, a new stream on the Live View page can be started by refreshing the page in the web browser. Note that the maximum video stream time does not apply to clients connecting via multicast.
To avoid bandwidth problems on the network, the frame rate allowed to each viewer can also be limited. Select either “Unlimited” or define a maximum frame rate per viewer.

2.5.6 Test

For a preview of the image and overlay settings before saving, click “Test”.
When you are satisfied with the settings, click “Save”.

2.5.7 Video source settings

These settings allow you to:

- Enter a descriptive name for the video source
- Eliminate black borders surrounding the image, by making offset adjustments.

NOTE: See the online help for more information.

2.5.8 Quad Stream settings

A Quad stream enables you to monitor all channels at the same time. Instead of having four Internet Explorer windows open, you can have just one window open with the Quad view. You can edit this view with the desired stream time, frame rate, and text overlay.

2.5.9 Image appearance

Modify the “Image Appearance” to optimize the video images according to your requirements. You can also rotate and mirror images.

2.5.10 Overlay settings

Include date, time, and/or text of your choice to be viewed on the images. The colour of the text may be set to white or black, while background colour may be set to white, black, transparent or semitransparent. The position of the text is set either to the top or the bottom of the images.

2.5.11 Video stream

The maximum video stream time can be set as “Unlimited”, or set a maximum stream time per session in seconds, minutes or hours. When the set time has expired, a new stream on the “Live View” page can be started by refreshing the page in the web browser. Note that the maximum video stream time does not apply to clients connecting via multicast.

To avoid bandwidth problems on the network, the frame rate allowed to each viewer can also be limited. Select either Unlimited or define a maximum frame rate per viewer.

2.5.12 Test

For a preview of the image and overlay settings before saving, click “Test”. When you are satisfied with the settings, click “Save”.

2.6 Checking the firmware

Firmware is software that determines the functionality of the AXIS Video Server. One of your first actions when troubleshooting a problem should be to check the currently installed version. The latest version may contain a correction that fixes your particular problem. The current firmware version in your Video Server can be seen under “Setup > Basic Configuration”.

2.7 Firmware update

2.7.1 AXIS Camera Management

AXIS Camera Management is an installation and management tool specially designed to manage multiple AXIS video products. Installed on your Windows PC, AXIS Camera Management can be used in all sizes of installations with AXIS video products. The tool is designed to manage hundreds of AXIS video products.

NOTE: Your AXIS network video products must have firmware 4.03/4.10 or higher in order to operate with the AXIS Camera Management software. Products with firmware versions below 4.03/4.10 must be upgraded via HTTP or FTP.

1. Download and install AXIS Camera Management on your computer.
2. Go to Support and check for the latest firmware releases for your AXIS products and save these to your hard disk.
3. Run AXIS Camera Management.
   All the AXIS devices found on the local subnet (or on subnets with routers that support multicasting) are shown in the list.
4. Select the devices that you want to upgrade with new firmware (you can even select different models) and click the “Upgrade” icon.
   NOTE: a dialog will open if some of the devices can not be configured, e.g. if the devices are not accessible.
5. The “Upgrade Firmware” dialog shows a list of camera models and, if you expand the list, you can see the current firmware version installed in each device.
6. Click to locate the new firmware versions stored on your hard drive. This needs to be done for each AXIS network camera or video server model.
7. Click “OK” to start upgrading the devices.

2.7.2 Options

There are a number of options you can choose when upgrading the firmware. The first is how the devices will be upgraded, i.e. one after the other (Sequence) or in groups (Parallel). As the devices will be offline when they are being upgraded, choosing “Sequence” will take longer, but fewer devices will be offline at the same time. Alternatively, choose “Parallel”, which is quicker, but more devices will be offline at the same time.

2.7.3 HTTP

5. Download the upgrade file to a directory that is accessible from your local computer.
6. Go to the products start page (e.g. http://192.168.0.90).
7. Click the “Setup” link and log in as “root” (or any other user with Administrator privileges) if you are prompted for a Username and Password.
8. You must be logged in as an “Administrator” to upgrade the unit.
9. Click “System options” in the menu to the left.
10. Click “Maintenance”.
11. Click the “Browse” button in the “Upgrade server” section.
12. Select the upgrade file you downloaded (and maybe decompressed) from www.axis.com
13. Click the “Open” button.
14. Click the “Upgrade” button in the “Upgrade server” section.
15. Wait for the flash load to complete, which may take 1-10 minutes.

The upgrade procedure is in four (4) steps. The LEDs indicate the progress of the upgrade procedure. For more information, please refer to the AXIS IP camera installation manual (FTI06019) for an explanation of the “Power”, “Status” and “Network” LED indicators.

Step	Detail	Description
1	Shutdown	Running applications are shut down and active connections are terminated.
2	Upload firmware	The old firmware will be erased and the new firmware will be saved. After a while, the progress of the upgrade will be displayed in the web browser.
3	Reboot	The system restarts automatically.
4	Reconfiguration	The new firmware settings are configured to match the previous settings.

At completion, the unit will initiate the system automatically.

3. NavVision settings

3.1 Introduction

To make the Axis camera work in NavVision, it will need some additional tuning in the NavVision program. This can be done in the camera_ip.uc.ini which can be found in the folder NavVision>config>network.

In this ini-file you will need to make the appropriate changes to align the file with the settings you have made in the Axis interface management..

3.2 camera_ip.uc.ini

The following example shows a typical ini-file as you can find it standard in the network folder. The yellow marked fields needs to be adjusted conform your earlier settings.

```
[IPCamera1]
ActiveX=

[CameraIP1Fld]
ActiveX=axis
Name=IP Camera 1
URL=http://192.168.1.241/axis-cgi/mjpg/video.cgi
PTZURL=http://192.168.1.241/axis-cgi/com/ptz.cgi
MediaType=mjpeg-unicast
User=root
Password=root
RTSPPort=554
HTTPPort=80

[IPCamera2]
ActiveX=

[CameraIP2Fld]
ActiveX=axis
Name=IP Camera 2
URL=http://192.168.1.242/axis-cgi/mjpg/video.cgi
PTZURL=http://192.168.1.242/axis-cgi/com/ptz.cgi
MediaType=mjpeg-unicast
User=root
Password=root
RTSPPort=554
HTTPPort=80
```

Figure 3-1: camera_ip.uc.ini

IP camera 1 will be the first camera on the first Axis interface. IP camera 2 the second and so on. While there is a max of 4 cameras on one interface, IP camera 5 will be the first camera on the second Axis interface.

The yellow marked URL and PTZURL needs to be the exact URL of the interface that it is referring to as you set earlier in the Axis interface (see Figure 2-5). This way, NavVision knows where to look for that specific camera. The rest should match standardly. If not, go back to the Axis interface and alter these settings.

3.3 NavVision mimic settings

To setup the camera in NavVision open a mimic and choose to add a “value” (see Figure 3-2).

Figure 3-2: Add value

Draw a rectangle as big as you find suitable and click it again (see Figure 3-3).

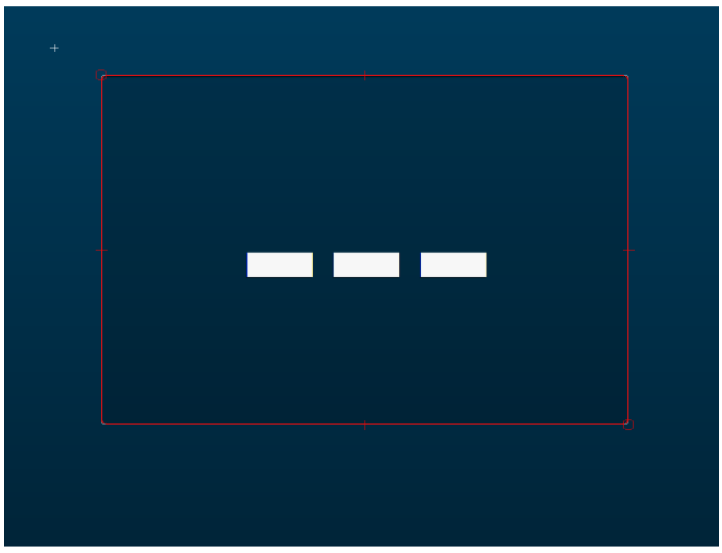

Figure 3-3: Value field

Go to the bottom of the page and under “Field” choose the network camera 1 and then IP camera 1 (see Figure 3-4).

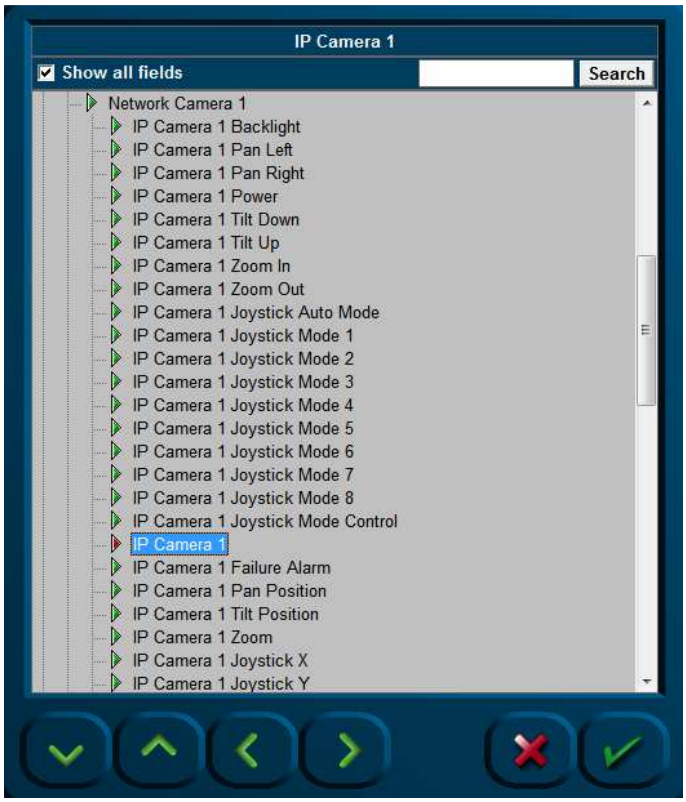

Figure 3-4: IP camera 1

If everything is connected right, you should now see the camera image from the Axis interface. If not, please check the settings.

If it is a PTZ camera, you would like to add some control. In NavVision we have a joystick for the pan and tilt and a slider for the zoom.

Go add a joystick by selecting it in the add menu (see Figure 3-5).

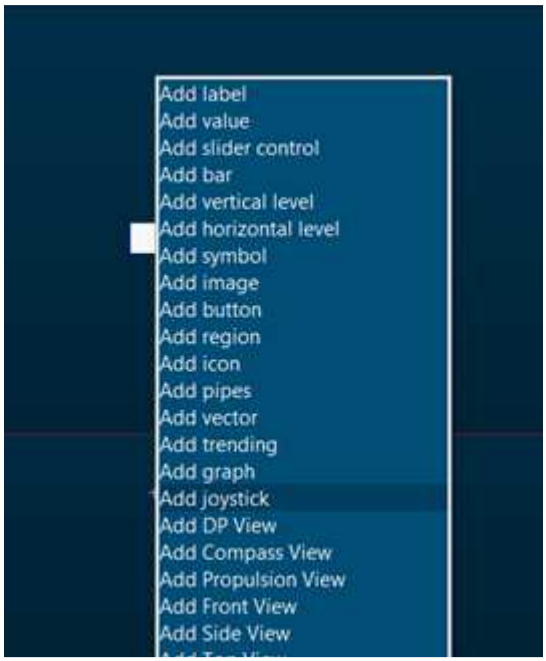

Figure 3-5: Add joystick

Select as “field” for the joystick, network camera 1 “IP Camera 1 Joystick X” (see Figure 3-6). This will automatically set the “X” and “Y” component to the joystick.

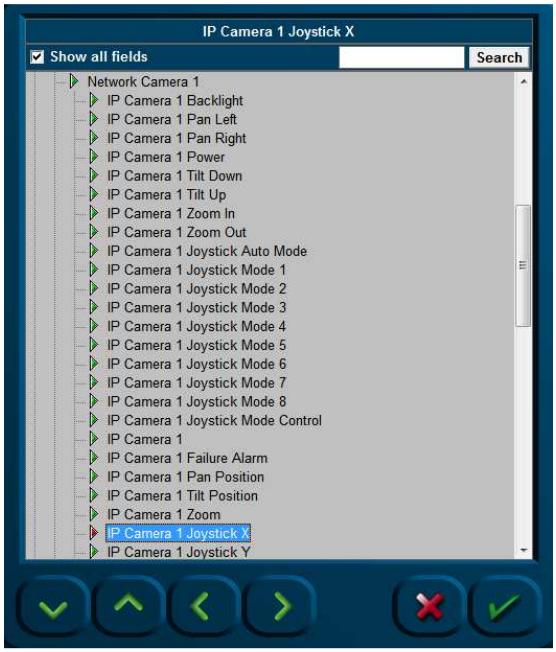

Figure 3-6: IP Camera 1 Joystick X

Add a slider underneath the joystick and set that to “IP Camera 1 Joystick Z to get a Zoom handle (see Figure 3-7).

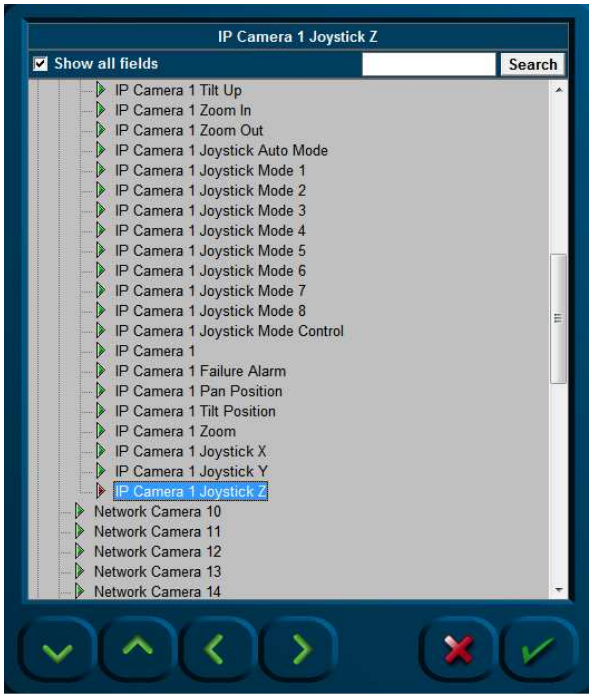

Figure 3-7: IP Camera 1 Joystick Z

Technical specifications

Detail	Description
Model	AXIS 241Q: 4 video channels
Video compression	• MPEG-4 Part 2 (ISO/IEC 14496-2) • Motion JPEG
Resolutions	• 4CIF, 2CIF Expanded, 2CIF, CIF, QCIF • Max. 704 x 480 (NTSC) 704 x 576 (PAL) • Min. 176 x 120 (NTSC) 176 x 144 (PAL)
Frame rate MPEG-4	Up to 30/25 (NTSC/PAL) at CIF
Frame rate motion JPEG	Up to 20/17 (NTSC/PAL) at CIF
Video streaming	• Multi-stream MPEG-4 and motion JPEG • Controllable frame rate and bandwidth • VBR/CBR MPEG-4
Image settings	• Compression • Colour • Rotation: 90°, 180°, 270° • Aspect ratio correction • Mirroring of images • Text and image overlay • Privacy mask • De-interlace filter
Pan/Tilt/Zoom	• Wide range of analogue PTZ cameras supported[1] • 20 presets/camera • Guard tour • PTZ control queue • Supports Windows compatible joysticks
Security	• Password protection • IP address filtering • HTTPS encryption • IEEE 802.1X network access control • Digest authentication • User access log
Supported protocols	• IPv4/v6, HTTP, HTTPS, QoS layer 3 DiffServ, FTP, SMTP, Bonjour, UPnP, SNMPv1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, etc • SSL/TLS[2]
Application Programming Interface	• Open API for software integration, including VAPIX® from AXIS Communications, AXIS Media Control SDK, event trigger data in video stream

[1] Drivers available for download at www.axis.com

[2] This product includes software developed by the Open SSL Project for use in the Open SSL Tool kit (www.openssl.org)

	• Quality of Service (QoS) layer 3, DiffServ Model • Watchdog ensures continuous operation, event notifications can be monitored by other systems • Embedded Linux operating system
Intelligent video	• Video motion detection • Active tampering alarm
Alarm triggers	• Intelligent video • External inputs • Video loss
Alarm events	• File upload via FTP, HTTP and email • Notification via email, HTTP and TCP • External output activation
Video buffer	9 MB pre- and post-alarm per channel
Video access from web browser	• Camera live view • Video recording to file (ASF) • Sequence tour for up to 20 AXIS video sources • Customizable HTML pages • Windows XP, 2000, 2003 server • DirectX 9c or higher For other operating systems and browsers see www.axis.com/techsup
Casing	• Metal casing. Standalone, stackable or with brackets for wall or cage mount
Processors and memory	• ARTPEC-2, 8 MB Flash • 64 MB RAM • Battery backed-up real-time clock
Power	7 – 20 VDC, max. 8 W
Connectors	• Analog composite video NTSC/PAL auto-sensing • 4 BNC inputs • RJ-45 10BaseT/100BaseTX • I/O terminal block for four configurable inputs/outputs • RS-485/RS-422 • D-sub for RS-232 port
Operating conditions	• 5 – 50°C • Humidity 20 – 80% RH (non-condensing)
Approvals	• EN55022 Class B • EN61000-3-2 • EN61000-3-3 • EN55024 • FCC Part 15 subpart B Class B • ICES-003 Class B • VCCI Class B • C-tick AS/NZS CISPR 22 • EN69050

	• Power supply: EN60950, UL, cUL
Dimensions (H x W x D)	42 x 140 x 155 mm
Weight	540 g
Accessories (included)	• Power supply (not used) • Mounting and connector kit • Installation guide • CD with installation and management tools, software and user's manual • Windows decoder user license
Accessories (not included)	• AXIS 295 video surveillance joystick • MPEG-4 decoder multi-user license pack

4. Outline drawing

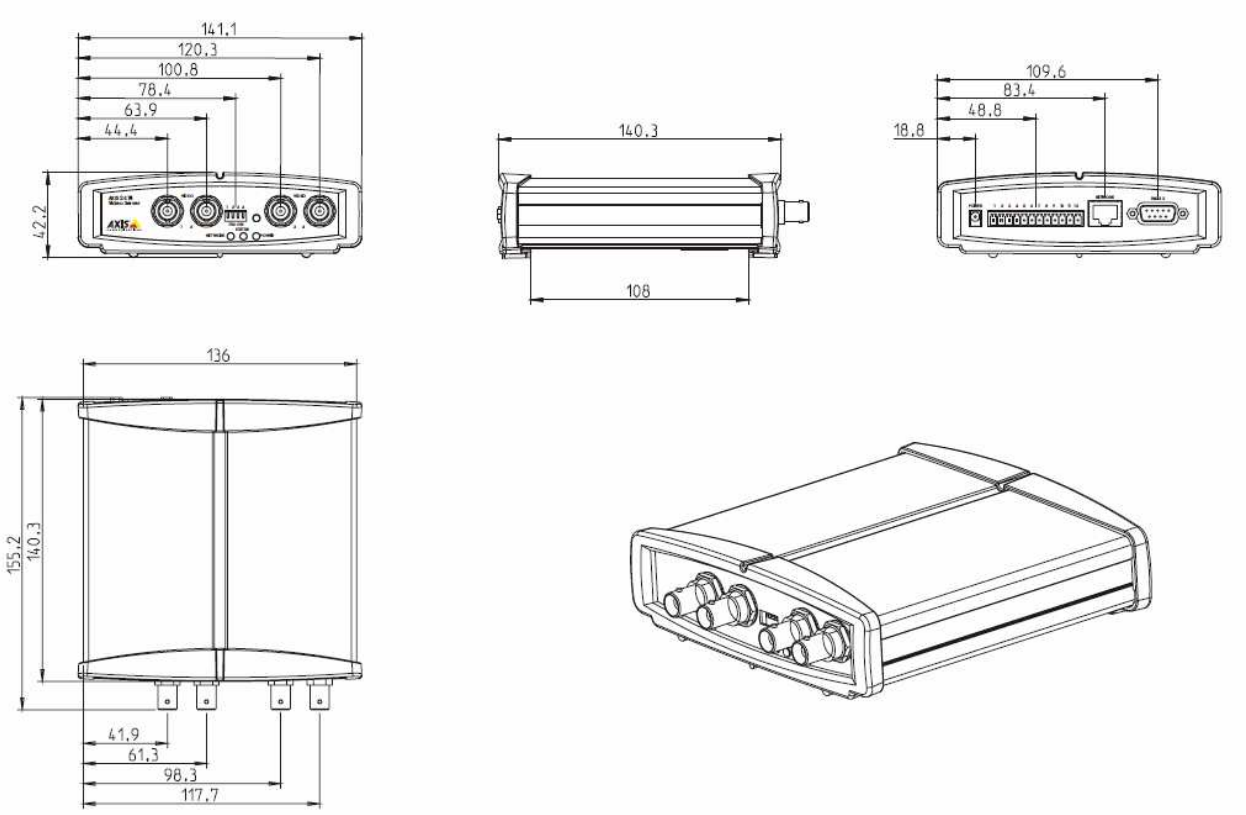

Figure 4-1: Outline drawing[3]

[3] Dimensions in mm