

AXIS 213 PTZ Network Camera

User's Manual

About This Document

This manual is intended for administrators and users of the AXIS 213 PTZ Network Camera, and is applicable for software release 4.00. Previous experience of networking will be of use when installing and using this product. Some knowledge of UNIX or Linux-based systems would also be beneficial, for developing shell scripts and applications. Later versions of this document will be posted to the Axis Website, as required. See also the product's online help, available via the Web-based interface.

Safety Notices Used In This Manual

Caution! - Indicates a potential hazard that can damage the product.

Important! - Indicates a hazard that can seriously impair operation.

Do not proceed beyond any of the above notices until you have fully understood the implications.

Intellectual Property Rights

Axis AB has intellectual property rights relating to technology embodied in the product described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the patents listed at <http://www.axis.com/patent.htm> and one or more additional patents or pending patent applications in the US and other countries.

This product contains source code copyright Apple Computer, Inc., under the terms of Apple Public Source License 2.0: <http://www.opensource.apple.com/apsl/>
The source code is available from:
<http://developer.apple.com/darwin/projects/rendezvous>

Legal Considerations

Camera surveillance can be prohibited by laws that vary from country to country. Check the laws in your local region before using this product for surveillance purposes.

Electromagnetic Compatibility (EMC)

USA - This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his/her own expense will be required to take whatever measures may be required to correct the interference. Shielded cables should be used with this unit to ensure compliance with the Class A limits.

Europe **CE** - This digital equipment fulfills the requirements for radiated emission according to limit B of EN55022/1994, and the requirements for immunity according to EN50082-1/1992 residential, commercial, and light industry.

Japan - This is a class B product based on the

standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

Australia - This electronic device meets the requirements of the Radio communications (Electromagnetic Compatibility) Standard 1998 AS/NZS 3548.

Liability

Every care has been taken in the preparation of this manual; Please inform your local Axis office of any inaccuracies or omissions. Axis Communications AB cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals without prior notice. Axis Communications AB makes no warranty of any kind with regard to the material contained within this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Axis Communications AB shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance or use of this material.

Trademark Acknowledgments

Acrobat, Adobe, Boa, Ethernet, IBM, Internet Explorer, Linux, Macintosh, Microsoft, Mozilla, Netscape Navigator, UNIX, Windows, WWW are registered trademarks of the respective holders. Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries. UPnP is a certification mark of the UPnP™ Implementers Corporation. Axis Communications AB is independent of Sun Microsystems Inc.

Axis Customer Services

Should you require any technical assistance, please contact your Axis reseller. If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response. If you are connected to the Internet, you can:

- download user documentation and firmware updates
- find answers to resolved problems in the FAQ database. Search by product, category, or phrases
- report problems to Axis support staff by logging in to your private support area
- visit the Axis Support Web at www.axis.com/techsup/

Safety Notice - Battery Replacement

The AXIS 213 uses a 3.0V CR2032 Lithium battery as the power supply for its internal real-time clock (RTC). This battery will, under normal conditions, last for a minimum of 5 years. Low battery power affects the operation of the RTC, causing it to reset at every power-up. A log message will appear when battery replacement is required. The battery should not be replaced unless required! If the battery does need replacing, please observe the following points:

Caution!

- Danger of Explosion if battery is incorrectly replaced
- Replace only with the same or equivalent battery, as recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

Table of contents

- Product Description 5
 - Hardware Inventory 5
 - AXIS 213 PTZ Network Camera 6
- Installing the AXIS 213 8
 - Connecting the Hardware 8
 - Installing on a Network 9
 - AXIS Media Control (AMC) 9
 - Manual Installation using AXIS IP Utility 10
 - Manual Installation using ARP and Ping in Windows 11
 - Manual Installation using ARP and Ping in UNIX/Linux 12
 - AXIS Internet Dynamic DNS Service 13
- Using the PTZ Network Camera 14
 - Accessing the AXIS 213..... 14
 - Live View..... 15
- Configuring the PTZ Network Camera 18
 - Accessing the Setup Tools..... 18
 - Overview of the Setup Tools 19
 - Using the Setup Tools 21
- Event Configuration 32
 - Event Servers 32
 - Event Types 33
 - Port Status 35
- System Options..... 36
 - Security..... 36
 - Date & Time 37
 - Network - TCP/IP Settings..... 37
 - Network - SOCKS..... 39
 - Network - SMTP (email) 39
 - Network - UPnP..... 39

Ports & devices - I/O Ports	40
Maintenance.....	40
Support	41
Advanced	41
Resetting to Factory Default Settings	42
Connection Module	43
Installing the audio equipment.....	43
I/O inputs and outputs.....	43
Video Out	43
Schematic Diagram - Connection Module	44
Troubleshooting	45
Checking the Firmware	45
Updating the Firmware	45
Support	46
Technical Specifications.....	49
Index	52

Product Description

The AXIS 213 is a full-featured PTZ Network Camera for security surveillance and remote monitoring needs. It has the ability to make real time full frame rate Motion JPEG video available on the network.

The AXIS 213 can optionally be equipped with a connection module with 2 inputs and 3 outputs, which can be connected to external devices, e.g. door sensors and alarm bells.

Video can be viewed in 5 resolutions (up to 704x576). The AXIS 213 contains advanced scheduling tools which can be used to trigger on an event. As the AXIS 213 is designed for use in security systems, it is equipped with security features, such as IP address filtering and multilevel password.

The AXIS 213 has a built-in Web server, providing full access to all features through the use of a standard Web browser. The built-in script tool allows basic applications to be created, providing basic surveillance solutions. For advanced functionality, the PTZ Network Camera is easy to integrate through the use of AXIS HTTP API. For more information, refer to <http://www.axis.com/developer>

Hardware Inventory

Check the items supplied with your AXIS 213 against the following list:

Item	Title/Variants
PTZ Network Camera	AXIS 213
Indoor Power Supply with power cable	Europe
	UK
	Australia
	USA/Japan
	Korea
Printed Document	AXIS 213 Installation Guide
Warranty Document	
CD	CD containing complimentary software and the AXIS 213 User's Manual
Optional Accessories	
Connection Module (Audio)	

The power supply is country specific, please check that the type of power supply you are using is correct.

AXIS 213 PTZ Network Camera

① **IR Light** - infrared light for night vision. Activated from the AXIS 213 web page.

② **Network Indicator** - the multi-colored network indicator flashes as follows:

- Amber - flashes for activity on a 10 Mbit/s network
- Green - flashes for activity on a 100 Mbit/s network
- Red - flashes rapid red for hardware error
- None - no connection



③ **Network Connector** - The AXIS 213 connects to the network via a standard RJ45 connector. Supporting NWAY, the AXIS 213 detects the speed of the local network segment (10BaseT/100BaseTX Ethernet).

④ **Output/Input Connector** - For connection of the connection module cable. See below for information.

⑤ **Power Connector** - For connection of the PS-K power adaptor (included).

The **Reset Button** is located on the underside of the unit. This button is used to restore the factory default settings, as described in *Resetting to Factory Default Settings*, on page 42 or to install the AXIS 213 using *AXIS Internet Dynamic DNS Service*, on page 13.

The **Serial Number** is located on the label on the underside of the unit.

Optional Accessory:

Connection Module - The connection module provides the physical interface to 3 relay outputs, 2 digital inputs, audio in/out, video in/out and the RS-232C Serial port. See *Connection Module*, on page 43 for more information.



Installing the AXIS 213

Please observe the following before installing the AXIS 213 PTZ Network Camera.

- This product is designed for indoor use or locations where it is protected from rain and moisture. To operate the camera in these conditions, use the outdoor housing accessories.
- Do not use strong or abrasive detergents when cleaning the casing. Use a mild detergent and wipe gently.
- Never position the camera directly towards the sun or other bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects.

Connecting the Hardware

Before you begin

If the AXIS 213 is to be mounted in a position where it is difficult to access, it is recommended that you set the IP address and get the camera up and running before completing the hardware installation, i.e. skip step 1 below until the installation is completely verified.

The AXIS 213 PTZ Network Camera is supplied with a bracket for ceiling mounting.

1. Drill two holes in the ceiling and secure the bracket with the appropriate screws according to the ceiling material.
2. Connect a standard RJ-45 network cable to your AXIS 213 and connect it to the network.
3. Optionally, connect the Connection Module (not supplied) to the camera.
4. Connect the power cable.
5. The hardware installation is now complete, proceed to *Installing on a Network*, on page 9.



Note: If the AXIS 213 is to be placed upright on a desktop, remove the four screws on the underside of the unit to remove the bracket. Place the adhesive plastic feet by the screw holes.

Installing on a Network

The AXIS 213 is designed for installation on an Ethernet network. This involves assigning an IP address to the PTZ camera, either manually or via an automated network service (DHCP). Select one of the following procedures depending on your network:

Available procedures:

Manual Installation using AXIS IP Utility (Windows)	on page 10
Manual Installation using ARP and Ping in Windows	on page 11
Manual Installation using ARP and Ping in UNIX/Linux	on page 12
AXIS Internet Dynamic DNS Service	on page 13

Notes:

- The AXIS 213 has a default IP address - 192.168.0.90
- DHCP is enabled by default
- The installation description is also available in German, French, Spanish and Italian in the AXIS 213 Installation Guide

AXIS Media Control (AMC)

AXIS Media Control (AMC) - an ActiveX component required for Microsoft Internet Explorer which is installed automatically on first use.

AMC must be installed for audio support and for viewing live images in Microsoft Internet Explorer. If your working environment restricts additional software components, you can configure your AXIS 213 to use a Java applet for updating the images (applies to video images, not audio). See the online help files under **Live View Config | Layout | Default Viewer** for Internet Explorer. Or use another supported Web browser.

Once AMC is installed, the AMC viewer toolbar will display the audio controls and additional video controls.

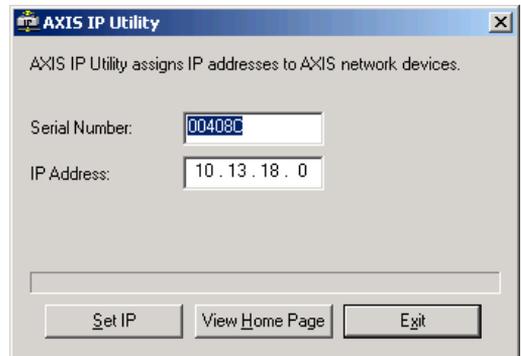
Manual Installation using AXIS IP Utility

AXIS IP Utility is a Windows software application that installs the AXIS 213 to your local network using a static IP address.

- Download the AXIS IP Utility software to your computer, free of charge from the Support pages at <http://www.axis.com/techsup/software>
- Double-click the setup.exe file and follow the on-screen instructions to install the software on your computer.

Follow these instructions to set the IP address manually using AXIS IP Utility:

1. Acquire an unused IP address for your AXIS 213. (AXIS IP Utility detects the subnet your computer is connected in. The AXIS 213 must be installed on the same subnet).
2. Connect a standard RJ-45 network cable to your AXIS 213 and connect it to the network.
3. Connect the power to the AXIS 213.



4. Start AXIS IP Utility on your computer.
5. Enter the serial number:

The serial number/MAC address (S/N) is located on the label on the AXIS 213

6. Enter the IP address acquired for your AXIS 213 and click **Set IP**.
7. When prompted by AXIS IP Utility, restart the PTZ Network Camera by disconnecting and reconnecting the external power supply.
8. A message confirming that the IP address has been set will be displayed, click **OK**.
9. Click **View Home Page** to access the AXIS 213 Web pages.
10. Enter a password for the root user (administrator).
11. If required, accept the installation of **AMC** onto your workstation See *AXIS Media Control (AMC)*, on page 9 for more information.
12. The installation is now complete, proceed to *Using the PTZ Network Camera*, on page 14.

Manual Installation using ARP and Ping in Windows

Follow these instructions to assign a unique IP address to your product from a computer on your network:

1. Acquire an unused IP address for the AXIS 213 from your network administrator.
2. Connect a standard network cable to your AXIS 213 and connect it to the network.
3. Locate the serial number/MAC Address (S/N) found on the label on the AXIS 213.
4. From a computer on your network, open a Command Prompt, i.e. from the Windows Start menu, select Run... and type cmd in the field. Click OK.
5. Enter the commands:

Syntax:

```
arp -s <IP address> <MAC address>
ping -l 408 -t <IP address>
```

Note: The ping command is followed by -l (lower case L)

Example

The screenshot shows a Windows Command Prompt window titled 'C:\WINNT\system32\cmd.exe'. The text inside the window reads: 'Microsoft Windows 2000 [Version 5.00.2195] (C) Copyright 1985-2000 Microsoft Corp.' followed by the command 'R:\>arp -s 192.168.0.125 00-40-8c-1a-2b-3c' and the command 'R:\>ping -l 408 -t 192.168.0.125_'. The cursor is positioned at the end of the second command.

6. Connect the power to the AXIS 213.
7. When 'Reply from 192.168.0.125: ...' is displayed (approximately 10-15 seconds), type Ctrl+C to close the ARP Ping session.
8. Start a Web browser and enter the IP address in the Address/Location field.
9. Press Enter.
10. Enter a password for the root user (administrator).
11. If required, accept the installation of AMC onto your workstation. See *AXIS Media Control (AMC)*, on page 9 for more information.
12. The installation is now complete, proceed to *Using the PTZ Network Camera*, on page 14.

Manual Installation using ARP and Ping in UNIX/Linux

Assign your product with a unique IP address from a computer on your network, as follows:

1. Acquire an unused IP address for the AXIS 213 from your network administrator.
2. Connect a standard network cable to your AXIS 213 and connect it to the network.
3. Locate the serial number/MAC Address (S/N) found on the label on the AXIS 213.

Syntax:

```
arp -s <IP Address> <MAC Address> temp  
ping -s 408 <IP address>
```

Example:

```
arp -s 192.168.0.125 00:40:8c:18:10:00 temp  
ping -s 408 192.168.0.125
```

4. Connect the power to the AXIS 213.
5. Close the ARP Ping session once 'Reply from 192.168.0.125: ...' (or similar) is displayed (approximately 10-15 seconds).
6. Start a Web browser and enter the IP address in the Address/Location field.
7. Press Enter.
8. Enter a password for the root user (administrator).
9. The installation is now complete, proceed to *Using the PTZ Network Camera*, on page 14.

AXIS Internet Dynamic DNS Service

AXIS Internet Dynamic DNS Service provides a one-click procedure that makes the AXIS 213 available on your local network and over the Internet. On installation, the AXIS 213 will receive a URL (web address), which can then be used to access it. The PTZ Network Camera can be unregistered from the service at any time. Please visit www.axiscam.net for more details on AXIS Internet Dynamic DNS Service.

Requirements

To use the AXIS Internet Dynamic DNS Service, the following is required:

- A DHCP server connected to the network
- An Internet connection that does not require a proxy server for HTTP access.

Installation Procedure

Please note that this procedure will send the AXIS 213's IP address, firmware version, product type and serial number to the Axis Internet Dynamic DNS Service.
No personal information will be transferred.

1. Connect the AXIS 213 to your local network, using a standard (RJ-45) network cable.
2. Optionally, connect the Connection Module to the camera.
3. Connect the power to the PTZ Network Camera.
4. Wait 60 seconds and, using a suitably pointed object, push the reset button on the underside of the PTZ camera once.
5. Visit www.axiscam.net where you will be guided through the remainder of the installation. Please have the serial number of your product ready and follow the instructions on the screen.

The serial number/MAC address (S/N) is located on the label on the underside of the AXIS 213

6. Enter a password for the root user (administrator).
7. If required, accept the installation of AMC onto your workstation. See *AXIS Media Control (AMC)*, on page 9 for more information.
8. The installation is now complete, proceed to "Using the PTZ Network Camera" on page 14.

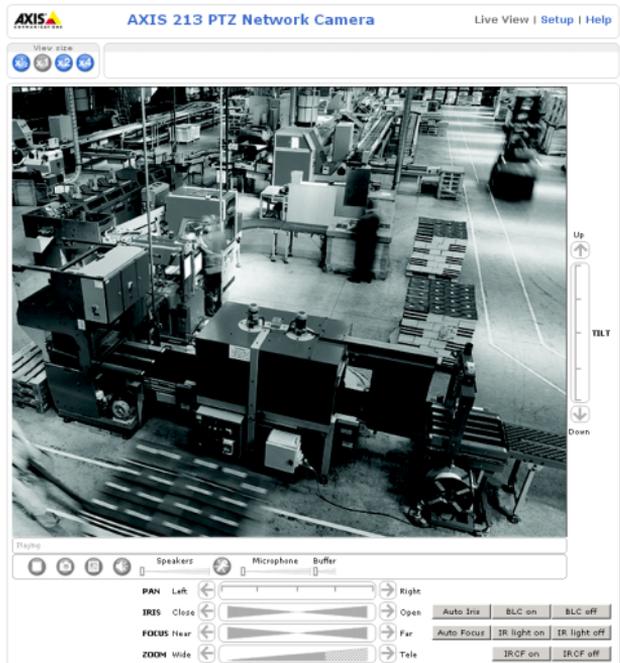
Using the PTZ Network Camera

The AXIS 213 can be used with most standard operating systems and supports Microsoft Internet Explorer 5.x or later, Netscape 7.x or later and Mozilla 1.4 or later.

Note: To be able to view streaming video in Microsoft Internet Explorer, you must set your Web browser to allow ActiveX controls and also allow that AXIS Media control (AMC) is installed on your workstation. For more information, see *AXIS Media Control (AMC)*, on page 9.

Accessing the AXIS 213

1. Start a Web browser (Internet Explorer, Mozilla, Netscape Navigator).
2. Enter the IP address or host name of the AXIS 213 in the **Location/ Address** field of your Web browser.
3. Enter the user name and password set by the administrator.
4. A video image is displayed in your Web browser.



Notes:

User functions in the AXIS 213 may have been customized to meet the specific requirements of the application. Consequently, many of the examples and functions in this section may differ from those displayed in your Live View page.

If the AXIS 213 is to be placed upright on a desktop, the image must be rotated. Go to **Setup | Video & Image** and set **Rotate image** to 180 degrees.

Live View

The following provides an overview of each button on the Live View page. If the AXIS 213 has been customized, the buttons will be displayed accordingly:



To resize the displayed image, click the **View Size** buttons: half-size ($x^{1/2}$), full-size ($x1$), $x2$ or $x4$. This will not change the resolution of the image (not available in Sequence Mode).



The **Output** buttons control an output directly from the Live View page. These buttons are configured under **Setup | Live View Config | Layout**.



Pulse - click this button to activate the port for a defined period of time, e.g. to switch on a light for 20 seconds.
Active/Inactive - click these buttons to manually start and stop a connected device, e.g. switch a light on/off.



These buttons start/stop the **Sequence Mode**. This mode is created in **Setup | Live View Config | Sequence mode** and automatically displays the view from preset positions at set intervals.



The **Action** buttons trigger an action directly from the Live View page. These buttons are configured under **Setup | Live View Config | Layout**. Click these buttons to manually start and stop events.



Use the **Snapshot** button to capture a snapshot of the image currently being displayed in the window. Right-click on the image to save it in JPEG format on your computer.

The **AMC** viewer toolbar is available in **Microsoft Internet Explorer only**. See *AXIS Media Control (AMC)*, on page 9 for more information. The AMC viewer toolbar displays the following buttons:



The **Play/Stop** buttons start and stop the live video stream.



The **Snapshot** button takes a snapshot of the currently displayed image. The Snapshot function and the target directory for saving snapshots can be configured from AMC (AXIS Media Control), which is available from the Windows Control Panel (Internet Explorer only).



Click the **View Full Screen** button and the video image will fill the entire screen area. No other windows will be visible. Press Esc (Escape) on the computer keyboard to cancel full screen view.



Click the **Mute /Microphone** buttons to switch the sound off and on. Only available if Audio is enabled and the Connection Module with a loudspeaker/microphone is connected.



Use the **volume** sliders to control the volume on the speakers and microphone and to set the available bandwidth speed. Only available if Audio is enabled and the Connection Module with a loudspeaker/microphone is connected.

The Live View page also displays the **Pan/Tilt/Zoom** controls.

The controls can be disabled/enabled for specified users by the administrator under **System Options | Security | Users | User List**



Click to make the subject appear clearer against e.g. a bright background.



Click these buttons to manually switch the IR light on the front of the camera on and off.



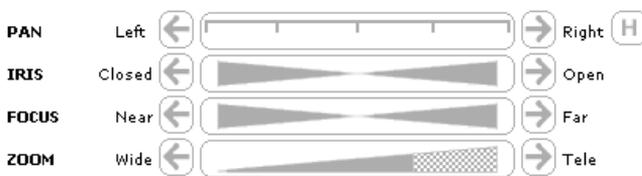
Click these buttons to manually switch the IR filter on and off.



Click this button to automatically adjust the image brightness



Click this button to automatically adjust the image focus



The manual Pan Tilt and Zoom bars control their respective functions in two different ways. Clicking anywhere on the bar's gradient allows for a 'smooth' adjustment of the camera's position, whilst clicking on the arrows at the two ends of the bar cause a stepped, incremental change.

It is also possible to click directly in the image to steer the camera in the desired direction.

Pan/Tilt/Zoom Control Queue

This means that the time the user is in control of the PTZ settings is limited and that a queue of users has been set up. Use the buttons to request or release control of the Pan/Tilt/Zoom controls.

PTZ Control Queue			
Status in queue:	<input type="text" value="Not in queue"/>	Position in queue:	<input type="text"/>
Time remaining:	<input type="text"/> seconds	<input type="button" value="Request control"/>	

The Pan/Tilt/Zoom Control Queue is set up by the administrator under **PTZ Configuration | Advanced | PTZ Control Queue**.

Configuring the PTZ Network Camera

This section describes how to configure the AXIS 213 and is intended for the administrator who has unrestricted access to all Setup tools and Operator who has access to Video & Image, Live View Config and Event Configuration. See the section on *Security*, on page 36 for more information on user access control.

The AXIS 213 is configured under Setup from a standard browser.

Accessing the Setup Tools

Follow the instructions below to access the Setup Tools from a Web browser.

1. Start the Web browser and enter the IP address or domain name of the AXIS 213 in the location/address field.



2. The Live View page is now displayed. Click Setup to display the Setup configuration tools.

A screenshot of the web interface for the AXIS 213 PTZ Network Camera. The page title is "AXIS 213 PTZ Network Camera" and the navigation bar includes "Live View | Setup | Help". A callout box labeled "Setup Configuration" with an arrow points to the "Setup" link. The main content area is titled "Basic Configuration" and contains instructions for using the camera, a note about required settings, and the software version "4.00". A left sidebar menu lists various configuration options: Basic Configuration (Instructions: 1. Users, 2. TCP/IP, 3. Date & Time, 4. Video & Image, 5. Audio), Video & Image, Audio, Live View Config, PTZ Configuration, Event Configuration, System Options, and About.

Overview of the Setup Tools

Basic Configuration - the links under Basic Configuration are shortcuts to the necessary basic settings the first time the unit is configured.

Tools	Settings / Options / Description
Instructions	General Instructions
Users	See System Options Security Users below
TCP/IP	See System Options Network TCP/IP below
Date & Time	See System Options Date & Time below
Video & Image	See Video & Image Video 1-4 below
Audio	See Audio Audio Settings below

Video & Image (Administrator/Operator)

Tools	Settings / Options / Description
Image	Image Settings Basic image settings; Resolution, compression, color settings, rotate image. Overlay settings places an overlay (e.g. a logotype) in the video image. Video stream - setting to limit the video stream display time.
Overlay Image	An overlay image is, e.g. a company logo added to the video image
Advanced	.Camera Settings for white balance, exposure control, shutter speed, night vision and backlight compensation. Settings for auto focus, noise reduction and image off-set.

Audio (Administrator/Operator)

Tools	Settings / Options / Description
Audio settings	Server settings: Audio mode, number of clients, echo cancellation and noise cancellation. Volume settings: Volume in/out and Mic input sensitivity. Client settings: mute speaker, mute microphone, connection speed settings.

Live View Config (Administrator/Operator)

Tools	Settings / Options / Description
Layout	Customize the features, add custom links, manual trigger buttons, IR light button, IR filter button and manual output control buttons to the Live View page. Default Viewer: set your preferred method of viewing moving images.
HTML Examples	Add live video from your AXIS 213 PTZ Network Camera to your own Web site or save an HTML page on your local hard disk to display live images from the AXIS 213.

PTZ Configuration (Administrator/Operator)

Tools	Settings / Options / Description
Preset Positions	Define and save preset positions for quick access to certain camera views.
Sequence Mode	'Guard Tour' where the AXIS 213 can rotate through the preset positions in a set order or randomly.
Limits	Set Pan/Tilt/Zoom and Focus limits to restrict the viewing areas. Set the speed for camera movement.
Advanced	Pan/Tilt/Zoom control queue settings.

Event Configuration (Administrator/Operator)

Tools	Settings / Options / Description
Instructions	General Instructions
Event Servers	Specify destinations for uploaded image files and/or notification messages from the PTZ Network Camera. FTP servers and HTTP servers are intended for saving image files and HTTP servers and TCP servers are intended for receiving notification messages.
Event Types	Set the PTZ Network Camera to act on Triggered or Scheduled Event Types, e.g. to upload images to a specified destination when an alarm is activated or at a set time.
Port Status	Shows the status for the inputs and outputs connected to the PTZ Network Camera - see Ports & Devices under System Options.

System Options (Administrator)

Tools	Settings / Options / Description	
Security	Users	Access to the PTZ Network Camera can be restricted to defined users only (maximum of 20). The administrator has unrestricted access to the Setup tools and determines rights for users at 3 levels; Administrator, Operator, Viewer.
	IP Address Filter	Once enabled, only the IP addresses shown in the list of allowed addresses will be permitted to access the PTZ Network Camera. All others will be blocked.
Date & Time	Define the date and time settings for your PTZ Network Camera, manually or automatically.	
Network	TCP/IP	Specify IP address configuration, DNS configuration, Host Name configuration, Notification of changed IP address. Register/unregister for AXIS Internet Dynamic DNS Service. Specify HTTP port and network traffic preferences.
	SOCKS	Specify SOCKS server to use when communicating with hosts on the other side of a firewall/proxy server.
	SMTP (email)	Specify the host names or addresses for your primary and secondary mail servers in the fields provided to allow the PTZ Network Camera to send event and error email messages to predefined email addresses.
	UPnP	The Network PTZ Camera includes support for Universal Plug and Play (UPnP). Enable UPnP (enabled by default) and enter a user friendly name for the AXIS 213.
Ports & Devices	I/O Ports	Configure the 2 digital inputs and 3 relay outputs supported by the AXIS 213.
Maintenance	PTZ Network Camera	Maintenance functions to restart the PTZ Network Camera, restore settings, upgrade the firmware, backup the parameters and restore to previous settings.
Support	Support Overview	Troubleshooting guide, generate server report (always attach the Server Report when contacting your support channel). Axis Support Services information.
	Logs & Reports	Generate Logs (all log information is shown in one file), Reports (important information about the server's status) and a parameter list (the unit's parameters and current settings).
Advanced	Scripting	This powerful function allows users to customize and use their own scripts to create specialized applications.
	Plain Config	Plain config allows direct access to all the configurable parameters.

About (Administrator)

Tools	Settings / Options / Description
About	Third Party Software Licenses - Link to the source code for the Linux kernel, Boa and more.

Using the Setup Tools

The following descriptions offer examples of the available features in the AXIS 213. For details of each setting, please refer to the online help files which are available from each page. Click  to access the help files.

Video & Image

To optimize the video images according to your requirements, modify the following settings under **Image Appearance**:

- Resolution
- Compression
- Rotate Image
- Color Setting
- Brightness

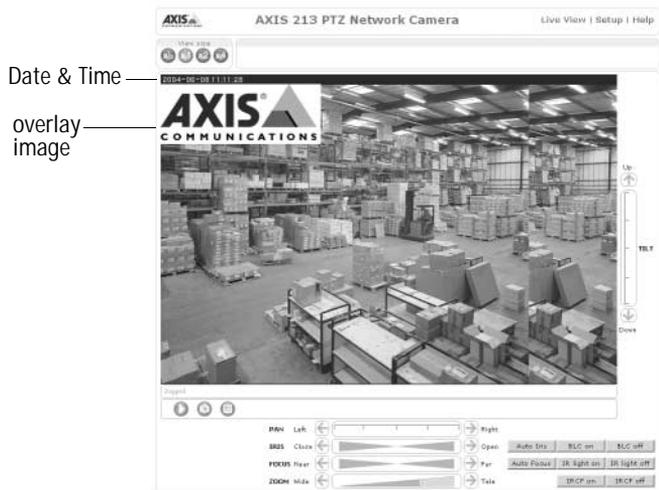
Note: All configuration of images and overlays will affect the performance of the PTZ Network Camera, depending on the usage and the available bandwidth. Please keep in mind the following when changing the image settings:

- Lower compression improves image quality, but generates larger files
- Color uses more bandwidth than Black & White
- Rotating the image 90 or 270 degrees will lower the maximum frame rate

Overlay Settings

Include an image, e.g. your company logo and date and time with your own text which is placed on one line at the top or bottom of the video image.

See *Overlay Image Settings*, on page 22 for instructions on how to upload an overlay image to the AXIS 213.



Video Stream

Define the maximum video stream time per session in seconds, minutes or hours. When the set time has expired, a new stream can be started by refreshing the page in the Web browser. For unlimited video stream time, set this value to 0.

Define the maximum frame rate (fps - frames per second) allowed for each viewer, to avoid bandwidth problems on the network.

Test - For a preview of the image and overlay settings before saving, click **Test**. The **Brightness** setting does not affect the **Test** image. When you are satisfied with the settings, click **Save**.

Overlay Image Settings

An overlay image is an image included in the video image. This might, for example, be your own company logo. Follow these instructions to upload and use an overlay image:

1. Go to **Setup | Video & Image | Overlay Image**.
2. To upload the file (a logo or image) to the AXIS 213, click the **Browse** button and locate it on your computer or server.
3. Click the **Upload** button and follow the on-screen instructions.
4. The image is now available in the **Use overlay image** drop-down list.
5. Click **Save**.
6. Go to **Setup | Video & Image** and modify the parameters under **Overlay Settings**.

Overlay image requirements:

Image Formats

- Windows 24-bit BMP (full color)
- Windows 4-bit BMP (16 colors)
- OS/2 4-bit BMP (16 colors)

Image Size

The height and width of the overlay image in pixels must be exactly divisible by 4.

Overlay image limitations:

- If the image overlay and text overlay are larger than the video image, no overlay will be displayed. When also using a text overlay, this will occupy 16 pixels in height and as many in width as the video image. Please consider this when configuring the overlay image.
- If the overlay is initially positioned so that part of it is outside the video image, it will be relocated so that it appears over the video image, i.e. the entire image is always displayed.
- The maximum overlay image size supported by the AXIS 213 is the same as the maximum image resolution. See Technical Specifications, on page 46.

Please use the online help files  for more information.

Advanced

Camera - To optimize the lighting settings according to your requirements, modify the following settings under **Lighting Conditions**:

- **White balance** - the white balancing system in the AXIS 213 can automatically detect white in the image and intelligently use this as a reference for other colors.
- **Exposure control** - this setting is used to adapt to the amount/type of light being used. If set to **Manual**, select the desired **Shutter speed** from the drop-down list.
- **Night vision** - set the IR filter to on or off and click the **Use IR Lamp** button to light up the IR lamp on the front of the camera. The lamp will automatically switch off after 8 hours.
- **Backlight compensation** - this setting is used to make the subject appear clearer against e.g. a bright background.

Notes:

- If configured by the administrator under **Live View Config | Layout | IR Buttons** the viewer is able to switch the IR lamp and IR filter on and off, directly from the Live View page.
- In certain situations, the white balancing system will not operate effectively. Problems may occur if the image contains no white color at all, or if the dominant color is not white. In these circumstances, the white balance may incorrectly be based on another visible color in the image, and colors may become distorted. A pale background picture with reddish or blue foreground objects is very symptomatic of this condition. In such cases it is recommended that a fixed white balance setting is selected.

Image Settings

- Auto focus enabled (default setting)
- Noise reduction - sets the level of noise reduction in the image. i.e. sharpens the image. Setting the noise reduction to 'high' will cause a drop in frame rate (fps)

Image Offset

To eliminate a black border or black lines on the image on the live view page, change the horizontal or vertical position of the image by changing the X offset and Y Offset values.

Please use the online help files [?](#) for more information.

Audio

You can customize the audio settings to suit your requirements. Go to **Setup | Audio** to open the configuration page for audio.

Select **Enable Audio** and select the **Audio mode** according to your application. This can be:

- Full-Duplex
- Half-Duplex
- Simplex - Talk
- Simplex - Listen

Enter the max number of clients that will be able to access the application at any one time. Use this setting to limit access if you have limited bandwidth.

Send the sound from the active client to all other clients - if you are using Half-Duplex mode, this option can be used to send audio from the client currently transmitting to all the other clients, and not just to the server end.

The screenshot displays the 'Audio Settings' configuration page for an AXIS 213 PTZ Network Camera. The page is organized into several sections:

- General:** Includes a checked 'Enable audio' option.
- Server Settings:**
 - Audio mode: Set to 'Full-duplex (Talk and Listen simultaneously)'.
 - Max number of clients: Set to '10'.
 - Send the sound from the active client to all other clients (Only for Half-Duplex): Unchecked.
 - Push-to-talk (Only for Half-duplex and Simplex - Talk):
 - Toggle - Press to talk, Press again to stop: Selected.
 - Instant - Press and hold to talk: Unselected.
 - Enable slope filter, Decreases noise at low frequencies and improves speech quality: Checked.
 - Enable line echo cancellation: Checked.
 - Enable acoustic echo cancellation: Checked.
 - Noise canceller attenuation: Set to '0' dB.
 - Noise canceller I/O gain: Set to '0' dB.
- Volume Settings:**
 - Volume in: Set to '0' dB.
 - Volume out: Set to '0' dB.
- Client Settings:**
 - Speaker:
 - Unmuted: Selected.
 - Muted: Unselected.
 - Force speaker settings: Unchecked.
 - Microphone:
 - Unmuted: Unselected.
 - Muted: Selected.
 - Force microphone settings: Unchecked.
 - Speed: Set to '0.2 MB/s'.
 - Force connection settings: Unchecked.

At the bottom of the page, there are 'Save' and 'Reset' buttons.

When using Half-Duplex mode, the Push-To-Talk button will be visible. Select the mode to use for this button. Selecting Toggle means that when the button is pushed it will remain so until pushed a second time. Instant means that the button will remain active (pushed) until released.

Optimize the sound by enabling or disabling **slope filter**, **line echo cancellation**, **acoustic echo cancellation** depending on your application.

Set the level of noise reduction using the **Noise canceller attenuation** and **Noise canceller I/O gain** settings.

Adjust the **Volume Settings** settings for **Volume in**, **Volume out** and **Mic input sensitivity** to a suitable level depending on your application.

Adjust the **Client Settings** for the connected speaker and microphone.

Please use the online help files  for more information.

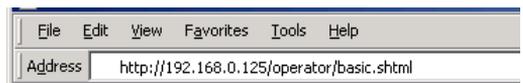
Live View Config - Live View Layout

Select **Use Axis look** to customize the features on the AXIS 213 Live View page to suit your requirements.

The following settings can be customized:

- Background color - the color behind the text and images on the page
- Text color - all text on the page
- Background picture
- Banner - shown at the top of the window
- Banner link - URL to a web address
- Logo
- Logo link (URL)
- Title - shown above the video stream
- Description - description below the video stream
- Show setup link - if you uncheck the Show setup link, the setup tools for the AXIS 213 will only be accessible by entering the full path in your browser.

The full path is: `http://<ip address>/operator/basic.shtml`



Custom Settings

Alternatively, select **Use custom settings** to use a custom web page and click **Configure...**

To be made available for selection in the Custom Settings setup dialog, your own web files, background pictures, colors etc. must first be uploaded to the AXIS 213. Once uploaded, the files are shown in the drop-down list.

1. Click the **Upload/Remove** button.
2. Enter the path to the file, e.g. a file located on your workstation or click **Browse**.
3. Select the user level for the uploaded file. Setting the user access level means that you have complete control over which pages can be viewed by which users.
4. Click the **Upload** button.
All uploaded files are shown in the list in the lower section of the page. To remove a file, check the box provided next to it and then click the **Remove** button.
5. Click **Close** to close the window.
 - To use your uploaded file, click the radio button and select the file from the drop-down list by **Own**:
 - To use an External file located somewhere other than in the AXIS 213, click the radio button and enter the URL by **External**:

Own Home Page

To use an uploaded web page as the default page, check the checkbox, select the page from the drop-down list and click **OK** to close the Custom Settings window.

User Defined Links

Enter a descriptive name and enter the URL in the provided field. The link will appear on the Live View page.

User defined CGI links can be used to issue HTTP API requests, e.g. PTZ commands.

Example:

1. Check **Show Custom Link 1**
2. Enter a descriptive name, e.g. CAM START.
3. Select the **Use as cgi link** radio button and enter the cgi link in the field:

```
http://192.168.0.125/axis-cgi/com/ptz.cgi?continuouspaniltmove=-30,-30
```



user defined link

4. Check **Show Custom Link 2**.
5. Enter a descriptive name, e.g. CAM STOP.
6. Select the **Use as cgi link** radio button and enter the cgi link in the field:

```
http://192.168.0.125/axis-cgi/com/ptz.cgi?continuouspaniltmove=0,0
```

7. These links will appear in the web interface and can be used to control the PTZ camera

For more information on the Axis HTTP API, see the Support / Developer pages on the Axis Web site at <http://www.axis.com>.

Action Buttons - These buttons can then be used to manually trigger and stop an event from the Live View page. See *Event Servers*, on page 32

The snapshot button allows users to take a snapshot of the video stream and save it on a computer.

Output Buttons - These buttons can then be used to manually start and stop an event from the Live View page, e.g. switch a light on/off:

- The Pulse button activates the port for a defined period
- Active/Inactive displays 2 buttons, one for each action (on/off)

IR Buttons- Check the checkboxes for **Show IR light button** and **Show IR filter button** to enable buttons on live view page for switching the IR filter and IR lamp on and off.

AMC Settings - Uncheck this box to remove the AMC (Axis Media Control) viewer toolbar under the image on the live view page.

Default Viewer for your Browser - select the appropriate radio button to define your method for viewing moving images depending on your Web browser and settings.

Please use the online help files  for details.

HTML Examples

You can add live video from your AXIS 213 to your own web site. The AXIS 213 can send Motion-JPEG to up to 20 simultaneous connections, although an administrator can restrict this to fewer.

Enter the **Image Type**, **Image size** and **Optional settings** to suit your Web page and click **Update**.

Copy the source code as displayed on the HTML examples page and paste it into your own Web page code.

Please use the online help files  for more information.

PTZ Configuration - Preset Positions

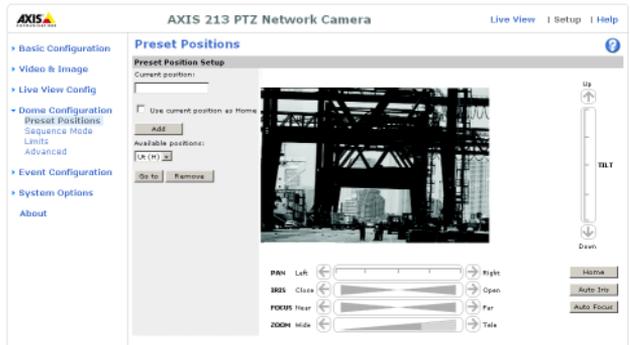
A preset position is a pre-defined camera view that can quickly and easily be viewed.

From **Preset Position Setup**, use the Pan, Tilt and Zoom (PTZ) controls to steer the camera to the required position. When satisfied with the camera's position, enter a descriptive name. This camera position is then saved as a preset position.

The AXIS 213 will take the exact position when the preset's name is selected from the Preset positions drop-down list. Preset positions can be selected in **Live View**, from events and in **Sequence mode**.

One position can be set as the **Home** position, which is readily accessible by clicking on the H button in both the Preset

Position Setup window and the Live View window. The position's name will have (H) added, e.g. Office Entrance (H).



Sequence Mode

The Live View page can be configured to rotate through the selected preset positions, in a set order or randomly.

Select the desired preset positions and enter the time in seconds to display each position (up to 59 minutes). Click **Save**.



The Sequence buttons will appear on the Live View page to enable the viewer to start and stop the sequence mode.

Limits

Define the **pan**, **tilt**, **zoom** and **focus** limits for the AXIS 213. Movements to the left and right, up and down can be restricted to narrow the area under surveillance. The near focus limit can be set to avoid focusing on objects too close to the camera.

Move speed sets the speed of the camera's Pan/Tilt movements. The default setting is maximum speed.

Advanced

PTZ Control Queue - The administrator can set up a queue for the PTZ controls. Once set up, the PTZ Control Queue buttons will appear on the Live View page offering one viewer exclusive control for a limited amount of time. Other users will be placed in the queue.

The screenshot shows a 'PTZ Control Queue' panel with the following fields and buttons:

- Status in queue:** A text input field containing 'Not in queue'.
- Position in queue:** A text input field that is currently empty.
- Time remaining:** A text input field followed by the word 'seconds'.
- Request control:** A button located to the right of the 'Time remaining' field.

PTZ Control Queue on Live View page

Please use the online help files [?](#) for more information.

Event Configuration

This section describes how to configure the AXIS 213 for alarm and event handling. The AXIS 213 can be configured to perform certain actions when certain types of events occur.

Event Type	A set of parameters describing how and when the PTZ Network Camera is to perform certain actions	
Triggered Event page 33	the circumstances that start an event	e.g. at a signal from an external device, such as a door switch or a motion sensor
Scheduled Event page 35	the circumstances that start an event	e.g. at a pre-programmed time
Action	what occurs when the event triggers	e.g. uploaded video images to an FTP server, email notification, etc.

Event Servers

Event Servers are used, e.g. for receiving uploaded image files and/or notification messages. To set up Event server connections in your AXIS 213, go to **Setup | Event Configuration | Event Servers** and enter the required information according to the selected server type.

Server type	Purpose	Requires information
FTP Server	<ul style="list-style-type: none"> used for uploading saved images 	<ul style="list-style-type: none"> Descriptive name of your choice User Name and Password (to FTP server) Upload path e.g. images/ Port number e.g. port 21 Use passive mode if there is a firewall between the PTZ camera and the FTP server
HTTP Server	<ul style="list-style-type: none"> used for notification messages used for uploading saved images 	<ul style="list-style-type: none"> Descriptive name of your choice URL User Name and Password (to HTTP server) Proxy address/Proxy port (if required) Proxy User Name and Password (if required)
TCP Server	<ul style="list-style-type: none"> used for notification messages 	<ul style="list-style-type: none"> Descriptive name of your choice User Name and Password (to TCP server) Port number e.g. port 80

For details on each setting, please refer to the online help files  which are available from each web page.

Note: Pre-trigger and Post-trigger buffers will be lost if the connection to the event server fails.

When the setup is complete, the connection can be tested by clicking the **Test** button (the connection test will take approximately 10 seconds).

Event Types

An **Event Type** is a set of parameters describing how and when the PTZ Network Camera is to perform certain actions.

Example: If somebody passes the connected camera, and an event has been configured to act on this, the PTZ Network Camera can e.g. record and save video images to an FTP server or send a notification email to a pre-configured email address with a pre-configured message.

Triggered Event

A Triggered event is activated from, e.g.:

- a switch (doorbell) connected to an input port on the PTZ Network Camera
- lost signal from the camera
- a manually activated action e.g. from an action button in the web interface
- on restart (reboot) after e.g. power loss

How to set up a triggered event

This example describes how to set the PTZ Network Camera to upload images when the main door is opened:

1. Click **Add triggered** on the **Event types** page.
2. Enter a descriptive name for the event, e.g. Main door.
3. Set the **Priority** - High, Normal or Low (see online help files).
4. Set the **Respond to Trigger...** parameters when the event is to be active, e.g. only after office hours
5. Select the trigger alternative from the **Triggered by...** drop-down list, e.g. an Input port with a connected sensor if the door is opened.
6. Set the **When Triggered...** parameters i.e. set what the PTZ Network Camera is to do if the main door is opened e.g. upload images to an FTP server.

7. Click OK to save the Event in the Event Types list.

AXIS 213 PTZ Network Camera Live View | Setup | Help

Event Types ?

Event Type List

Name	Status	Enabl.	Priority	Trig./Sched.	Actions*
filter off	Inactive	No	Normal		IS
sched filter...	Inactive	Yes	Normal	Time frame	IS

Fu=FTP upload, Hu=HTTP upload, Eu=Email upload, O=Output port, En=Email notification, Hn=HTTP notification, Tn=TCP notification, P=PTZ preset, IS=IR sensor.

Please use the online help files [?](#) for descriptions of each available option.

Pre-trigger and Post-trigger buffers

This function is very useful when checking to see what happened immediately before and after a trigger, e.g. 2 minutes before and after a door has been opened. Check the **Upload images** checkbox under **Event Types | Add Triggered... | When Triggered ...** to expand the web page with the available options.

Note: Buffer size - up to 9 MB buffer. The maximum length of time of the pre-/post-buffer depends on the image size and selected frame rate.

Include pre-trigger buffer - images stored internally in the server from the time immediately preceding the trigger. Check the box to enable the pre-trigger buffer, enter the desired length of time and specify the required image frequency.

Include post-trigger buffer - contains images from the time immediately after the trigger. Configure as for pre-trigger.

Note: If the pre- or post-buffer is too large for the internal memory, the frame rate will be reduced and individual images may be missing. If this occurs, an entry will be created in the unit's log file.

Continue image upload (unbuffered) - enable the upload of images for a fixed length of time. Specify the length of time for the uploaded recording, in seconds, minutes or hours, or for as long as the trigger is active. Finally, set the desired image frequency to the maximum (the maximum available) or to a specified frame rate. The frame rate will be the best possible, but might not be as high as specified, especially if uploading via a slow connection.

Scheduled Event

A **Scheduled event** can be activated at pre-set times, in a repeating pattern on selected weekdays.

How to set up a scheduled event

This example describes how to set the PTZ Network Camera to send an email notification with saved images from a set time:

1. Click **Add scheduled** on the **Event types** page.
2. Enter a descriptive **name** for the event, e.g. Scheduled email.
3. Set the **Priority** (High, Normal or Low).
4. Set the **Activation Time** parameters (24h clock) when the event is to be active, e.g. start on Fridays at 18.00 with a duration of 62 hours.
5. Set the **When Activated...** parameters i.e. set what the PTZ Network Camera is to do at the specified time e.g. send uploaded images to an email address.
6. Click **OK** to save the Event in the Event Types list.

Please use the online help files  for descriptions of each available option.

Port Status

Under **Event Configuration | Port Status** there is a list that shows the status for the connected inputs and outputs of the AXIS 213 for the benefit of the Operator who cannot access the System Options section.

Example: If the Normal state for a doorbell push button connected to an input is set to **Open circuit** - as long as the button is not pushed, the state is inactive. If the doorbell button is pushed, the state of the input changes to active.

System Options

Security

User access control is enabled by default, the administrator sets the root password on first access. Other users are authorized with user names and passwords, or the administrator can choose to allow anonymous viewer login to the Live View page, as described below:

Users - the user list displays the authorized users and access levels:

Viewer	Provides the lowest level of access, which only allows the user access to the Live View page
Operator	An Operator can view the Live View page, create and modify event types and adjust certain other settings. The Operator does not have access to the Systems Options configuration pages.
Administrator	An administrator has unrestricted access to the Setup Tools and can determine the registration of all other users.

User Settings - check the corresponding checkboxes to enable:

- **Anonymous viewer login** - allows any viewer direct access to the Live View page.
- **Anonymous PTZ control login** - allows any viewer access to the Pan/Tilt/Zoom controls on the Live View page.

IP Address Filter - The administrator can add up to 256 IP address ranges or single IP addresses to the **Allowed IP Addresses** list. If the IP address filtering checkbox is checked, the AXIS 213 will only allow access to requests coming from the IP addresses in the list.

See the IP address filtering help files  for information on how to add IP address ranges.

The users from these IP addresses need to be specified in the user list with the appropriate access rights (**User**, **Operator** or **Administrator**).

Referrals - to prevent unauthorized sources from including the video stream from the AXIS 213 into external Web pages, check the **Referrals** checkbox and enter the IP address or Host name of the computer that hosts the Web pages with the included video stream. Several IP addresses/host names can be defined and are separated by semicolons(;)

Date & Time

Current Server Time - displays the current date and time (24h clock). If this has not been configured, the time displayed is the default setting. The time can be displayed in 12h clock format in the Overlay Images (see below).

New Server Time - Select your time zone from the drop-down list and check the daylight saving time changes, if desired.

From the Time Mode section, select the preferred method to use for setting the time:

- **Synchronize with computer time** - sets the time from the clock on your computer.
- **Synchronize with NTP Server** - the PTZ Network Camera will obtain the time from an NTP server every 60 minutes. Specify the NTP server's IP address or host name. Note that if using a host name for the NTP server, a DNS server must be configured under TCP/IP settings. See [Network | TCP/IP](#) below.
- **Set manually** - this option allows you to manually set the time and date.

Date & Time Format Used in Images - specify the formats for the date and time (12h or 24h) displayed in the Live View video streams.

Use the predefined formats or use your own custom date and time formats. See [Advanced File Naming & Date/Time Formats](#) in the help files  for information on how to create your own file formats.

Network - TCP/IP Settings

IP Address Configuration - the IP address of the PTZ Network Camera can be set automatically via DHCP, or a fixed IP address can be set manually. A host name can be used and there are options for setting up notification of changes in the IP address. DHCP is enabled by default.

Note: Automatic IP address assignment via DHCP may lead to the situation where the IP address is changed and you lose contact. Configure the options for notification of IP address change (under Services) to receive notification from the PTZ Network Camera, when the IP address has been changed.

Alternatively, if your DHCP server can update a DNS server, you can access the AXIS 213 by host name which is always the same, regardless of the IP address.

Auto-Configure Link-Local Address is enabled by default and assigns the AXIS 213 with an additional IP address for the UPnP protocol. The AXIS 213 can have both a Link-Local IP and a static/DHCP IP address at the same time - these will not affect each other. See *Network - UPnP*, on page 39.

DNS Configuration - DNS (Domain Name Service) provides the translation of host names to IP addresses on your network.

Obtain DNS server address via DHCP - automatically use the DNS server settings provided by the DHCP server. Click the **View** button to see the current settings.

Use the following DNS server address - enter the desired DNS server by specifying the following:

- **Domain name** - enter the domain(s) to search for the host name used by the AXIS 213. Multiple domains can be separated by semicolons (;). The host name is always the first part of a Fully Qualified Domain Name, e.g. **myserver** is the host name in the Fully Qualified Domain Name **myserver.mycompany.com** where **mycompany.com** is the Domain name.
- **Primary DNS server** - enter the IP address of the primary DNS server.
- **Secondary DNS server** - will be used if the primary DNS server is unavailable.

Host Name Configuration - The AXIS 213 can be accessed using a host name, instead of an IP address. The host name is usually the same as the assigned DNS Name. It is always the first part of a Fully Qualified Domain Name and is always one word, with no period. For example, **myserver** is the host name in the Fully Qualified Domain Name **myserver.mycompany.com**.

For more information, please refer to the online help files 

Services

Options for notification of IP address change - if the IP Address for the PTZ Network Camera is changed automatically, e.g. by DHCP, you can choose to be notified. Click **Settings...** and enter the required information.

AXIS Internet Dynamic DNS Service - If the AXIS 213 PTZ Network Camera has been registered with the Axis Internet Dynamic DNS service and the IP address for the product changes, the service is updated to reflect the change. Check the box to enable/disable automatic updates.

The domain name currently registered at the Axis Internet Dynamic DNS service for your product can at any time be removed. To do this click **Settings...** and follow the instructions.

For more information, please refer to the online help files 

HTTP

The default HTTP port number (**port 80**) can be changed to any port within the range 1024-65535. This is useful for e.g. simple security port mapping.

Network Traffic

The default setting is **Auto-negotiate** which means that the correct speed is automatically selected. If necessary, you can set the connection speed by selecting it from the drop-down list. 10BaseT (Half/Full Duplex), 100BaseTX (Half/Full Duplex).

Maximum bandwidth - Specify, in Mbit/s or kbit/s, the maximum bandwidth that the PTZ Network Camera is allowed to use on your network. This is a useful function when connecting your PTZ Network Camera to busy or heavily loaded networks. The default setting is **Unlimited**.

For more information, please refer to the online help files 

Network - SOCKS

SOCKS is a networking proxy protocol. The AXIS 213 can be configured to use a SOCKS server to reach networks on the other side of a firewall/proxy server. This functionality is useful if the PTZ Network Camera is located on a local network behind a firewall, but notifications, uploads, alarms, etc., need to be sent to a destination outside the local network (e.g. to the Internet).

Network - SMTP (email)

(Simple Mail Transfer Protocol) Enter the host names or addresses for your primary and secondary mail servers in the fields provided to enable event and error email messages from the PTZ Network Camera to predefined addresses, via SMTP.

Network - UPnP

(Universal Plug and Play) The PTZ Network Camera includes support for Universal Plug and Play (UPnP) in Windows Millennium and Windows XP. UPnP is enabled by default.

Note: UPnP must be installed on your workstation. To do this, open the Control Panel from the Start Menu and select Add/Remove Programs. Select Add/Remove Windows Components and open the Networking Services section. Click Details and then select UPnP as the service to add.

Ports & devices - I/O Ports

The pinout, interface support and the control and monitoring functions are described in the section on the *Connection Module*, on page 43.

Maintenance

- **Restart** - The unit is restarted without changing any of the settings. Use this method if the unit is not behaving as expected.
- **Restore** - The unit is restarted and most current settings are reset to factory default values. The settings that will not be reset are as follows:
 - the boot protocol (DHCP or static)
 - the static IP address
 - the default router
 - the subnet mask
 - the system time
- **Default** - The Factory default button should be used with caution. Pressing this button will reset all of the PTZ Network Camera's settings to the factory default values (including the IP address)

Upgrade Server - See *Updating the Firmware*, on page 45.

Backup - click the **Backup** button to take a backup of all of the parameters, and any user-defined scripts. If necessary, it is then possible to return to the previous settings if the settings are changed and there is unexpected behavior.

Note: The root password will also be reset to the password saved in the backup file.

Restore - click the **Browse** button to locate the saved backup file (see above) and then click the **Restore** button. The settings will be restored to the previous configuration.

Note: Backup and Restore can only be used on the same unit running the same firmware. This feature is not intended for multi-configurations or for firmware upgrades.

Support

The **support overview** page provides valuable information on troubleshooting and contact information, should you require technical assistance.

Logs & Reports - when contacting Axis support, please be sure to provide a valid Server Report with your query.

View Information - The Log report and the Parameter List also provide valuable information for troubleshooting and when contacting Axis' support service.

Configuration

- **Log Level for Log Files** - from the drop-down list, select the level of information to be added to the Log file
- **Log Level for Email** - from the drop-down list, select the level of information to send as email and enter the destination email address.

Advanced

Programming Script Editor - Administrators and developers wishing to create a special level of customization within their applications can create their own programming scripts using the embedded PHP-based Script Editor. These scripts are configured into the file system of the AXIS 213.

Note: PHP is a server-side scripting language that is both open-source and cross-platform. You can obtain further information and a free download of the complete hypertext preprocessor software from the official PHP Website at: <http://www.php.net/>

More Scripting Information

Axis maintains a specialist site for users and developers who want to create their own scripts at: <http://www.axis.com/>

Using these programming scripts, you can develop applications for event triggering, alarm notification via e-mail, picture storage to FTP locations - and many other functions.

The available commands and programming syntax is described in detail, and several practical examples are available. Detailed instructions on how to download complete scripts into the file system are also provided.

Caution!

Improper use may cause unexpected behavior or even cause loss of contact with the unit. If a script does cause problems, reset the unit to its factory default settings (in which case, a backup file may be of use to return the unit to its latest configuration). **Axis strongly recommends that you do not use this function unless you fully understand the consequences.** Note that Axis' support will not assist with customized scripts. For more information, please visit the Developer pages at <http://www.axis.com/developer>

Plain Config - this function is for the advanced user. All parameters can be set and modified from this page, help is available from the standard help pages.

Resetting to Factory Default Settings

To reset the AXIS 213 to the original default settings, go to the **System Options | Maintenance** web page (described in *Maintenance*, on page 40) or use the control button on the **AXIS 213** as described below:

Using the Control Button

Follow the instructions below to reset the AXIS 213 to factory default settings using the Control Button.

1. Switch off the AXIS 213 by disconnecting the external power supply.
2. Using a suitably pointed object, press and hold the Reset button while you reconnect the power connector.
3. Keep the Reset button pressed for approximately 15 seconds.
4. Release the Reset button.

Note: Resetting to the factory default settings using the Reset Button will cause all parameters (including the IP address) to be reset. Refer to *Maintenance*, on page 40 for other methods that do not reset the IP address.

Connection Module

The connection module connects to the camera and is configured and controlled via the camera’s user interface. The Connection module is an optional accessory providing the following:

- audio in / out
- 3 relay outputs
- 2 digital inputs
- video in / out
- RS-232C Serial port

Installing the audio equipment

1. Connect a microphone (not supplied) to the **Audio IN** socket.
2. Connect a loudspeaker (not supplied) to the **Audio OUT** socket (amplified speakers only).

I/O inputs and outputs

The I/O inputs / outputs are used in applications for, e.g. event triggering, time lapse recording, alarm notification via email, picture storage to FTP locations.

- **Input** - e.g. a doorbell. If the doorbell is pressed, the state changes, and the input will be active (shown under **Event Configuration | Port Status**).
- **Output** - e.g. an alarm device that can be activated from Output buttons from the **Live View** page or as an action to an **Event Type**. The output will show as active (under **Event Configuration | Port Status**), if the alarm device is activated.

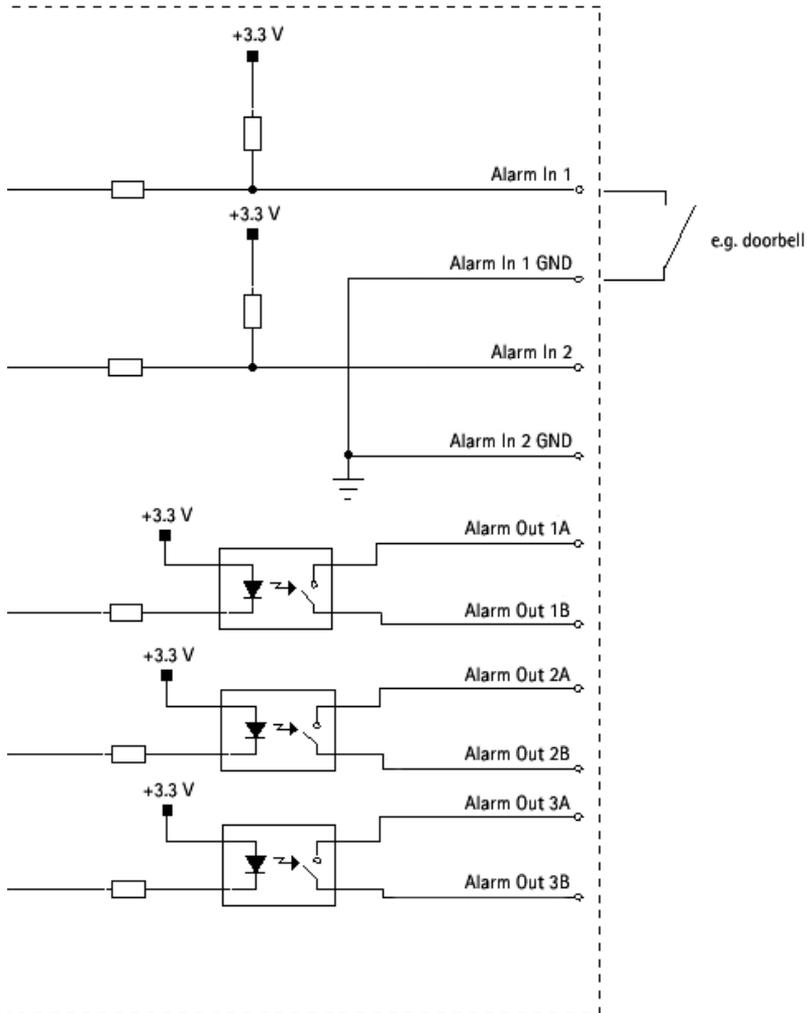
I/O	Description
Alarm In 1,2 Alarm GND	Connect to GND to activate or leave floating (unconnected) to deactivate
Alarm Out 1A,1B;2A,2B;3A,3B	Active output, electrical connection between A and B. Non active output, no connection between A and B. I _{max} =100mA, V _{Max} =24V

Video Out

Via a standard BNC connector, this output allows the AXIS 213 to be connected directly to traditional CCTV systems.

Video In and **RS-232C** can be configured under **Plain config** for use in advanced applications (see **System Options | Advanced | Plain Config**). Intended for advanced users only.

Schematic Diagram - Connection Module



Troubleshooting

Checking the Firmware

The firmware is software that determines the functionality of the AXIS 213. When you download firmware from the Axis Web site, your Axis product will receive the latest available functionality.

One of your first actions when troubleshooting a problem should be to check the currently installed firmware version. The latest version may contain a correction that fixes your particular problem. The current software version in your AXIS 213 is available under **Setup | Basic Configuration**.

Updating the Firmware

New firmware can be downloaded to the AXIS 213 over the network. Always read the upgrade instructions available with each new release, before updating the firmware.

1. Save the firmware file to your computer. The latest version of the AXIS 213 firmware is available free of charge from the Axis Web site at <http://www.axis.com/techsup> or from your local distributor.
2. Go to **Setup | System Options | Maintenance** in the AXIS 213 Web pages.
3. In the **Upgrade Server** section and browse to the desired firmware file on your computer. Click **Upgrade**.
4. Wait at least 20 minutes before restarting the AXIS 213 after upgrading.

- Notes:**
- Pre-configured and customized settings will be retained for use when the new firmware is running (providing that the features are available in the new firmware) although this is not guaranteed by Axis Communications.
 - After starting the process, you should always wait at least 20 minutes before restarting the AXIS 213, even if you suspect the procedure has failed.
 - Your dealer reserves the right to charge for any repair attributable to faulty updating by the user.

Support

If you contact the Axis support desk, please help us help you resolve your problems expediently by providing a server report, log file and a brief description of the problem.

Server Report - go to **Setup | System Options | Support Overview**. The server report contains important information about the server and its software, as well as a list of the current parameters.

Log file - go to **Setup | System Options | Logs & Reports**. The Log file records events within the unit since the last restart of the system and can prove a useful diagnostic tool for troubleshooting.


AXIS 213 PTZ Network Camera
Live View | Setup | Help

- ▶ Basic Configuration
- ▶ Video & Image
 - Audio
- ▶ Live View Config
- ▶ PTZ Configuration
- ▶ Event Configuration
- ▼ System Options
 - ▶ Security
 - ▶ Date & Time
 - ▶ Network
 - ▶ Ports & Devices
 - Maintenance
 - ▼ Support
 - Support Overview**
 - ▶ Logs & Reports
 - ▶ Advanced
- About

Support Overview

Troubleshooting

If you have problems, please try the troubleshooting [guide](#) before contacting your local supplier.

Server Report

Always attach the [Server Report](#) when contacting your support channel.

Axis Support Services

Should you require any technical assistance, please contact your [Axis reseller](#). If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response.

If you are connected to the Internet, you can:

- Download user documentation and firmware updates
- Find answers to resolved problems in the FAQ database. Search by product, category, or phrases
- Report problems to Axis support staff by logging in to your private support area

Visit the Axis Support Web at www.axis.com/techsup/

Symptoms, Possible Causes and Remedial Actions

Problems setting the IP address

Using ARP Ping	The IP address must be set within two minutes after the power has been applied to the AXIS 213, restart the server and try again. Also, make sure the ping length is set to 408.
The AXIS 213 is located on a different subnet	If the IP address intended for the AXIS 213 and the IP address of your computer are located on different subnets, you will not be able to set the IP address. Contact your network administrator for an IP address on the same subnet as the computer you are performing the installation from.
The IP address is being used by another device	<p>Disconnect the power from the AXIS 213.</p> <p>Run the Ping command (in a Command/DOS window, type ping and the IP address of the unit).</p> <p>If you receive: Reply from <IP address>: bytes = 32; time = 10 ms..... - this means that the IP address may already be in use by another device on your network. You must obtain a new IP address and reinstall the unit.</p> <p>If you receive: Request timed out - this means that the IP address is available for use with your AXIS 213. In this case, check all cabling and reinstall the unit.</p>

The AXIS 213 cannot be accessed from a Web browser

The IP address has been changed by DHCP	<ol style="list-style-type: none"> 1) Move the AXIS 213 to an isolated network or to one with no DHCP or BOOTP server. Set the IP address again, using the ARP Ping command. 2) Access the unit and disable BOOTP and DHCP in the TCP/IP settings. Return the unit to the main network. The unit now has a fixed IP address that will not change. 3) As an alternative to 2), if dynamic IP address via DHCP or BOOTP is required, select the required service and then configure IP address change notification from the network settings. Return the unit to the main network. The unit will now have a dynamic IP address, but will notify you if the address changes.
Other networking problems	Test the network cable by connecting it to another network device, then Ping that device from your workstation.

Cannot send notifications, uploads, alarms, etc, to a destination outside the local network.

Firewall protection	The AXIS 213 can be configured to use a SOCKS server to reach networks on the other side of a firewall/proxy server.
---------------------	--

Your AXIS 213 is accessible locally, but not externally

Firewall protection	Check the Internet firewall with your system administrator.
Default routers required	Check if you need to configure the default router settings.
The Internet site is too heavily loaded	Use a script running on your web server to relay images from the AXIS 213 to the Internet.

A firmware upgrade has been interrupted or the firmware has in some other way been damaged	<p>A rescue firmware is running in the product. First, set the IP address using AXIS IP utility or ARP and Ping,</p> <p>Then, from a Web browser, access the unit and download the latest firmware to the product, see <i>Updating the Firmware</i>, on page 45.</p>
--	--

No images are displayed in the Web interface

Problem with AMC (<i>Internet Explorer only</i>)	To enable the updating of images in Microsoft Internet Explorer, set your Web browser to allow ActiveX controls. Also, make sure that AXIS Media Control (AMC) component is installed on your workstation.
--	--

Installation of additional ActiveX component restricted or prohibited	Configure your AXIS 213 to use a Java applet for updating the images under Live View Config Layout Default Viewer for Internet Explorer. See help files for more information.
---	---

Video Image Problems

Image too dark or too light.	See the help files on Video & Image Settings.
Black borders around the video image	Adjust the X and/or Y offset, under Video & Image Advanced. See the online help files for information.
Problems uploading own files	There is only limited space available for the upload of your own files. Try deleting one or more existing files, to free up space.
Missing images in uploads	This can occur when trying to use a larger image buffer than is actually available. Try lowering the frame rate or the upload period.
Slow image update	Configuring, e.g. pre-buffers, hi-res images, high frame rate etc will reduce the performance of the AXIS 213.
Slow performance	Slow performance may be caused by e.g. heavy network traffic, many users with access to unit, low performing client, use of features such as Event handling., Image rotation.

Bad snapshot images

Display incorrectly configured on your workstation	In Display Properties, configure your display to show at least 65000 colors, i.e. at least 16-bit. Using only 16 or 256 colors on your display will produce dithering artifacts in the image.
--	--

Audio problems

No sound from the audio module or from a PC trying to access a web page containing audio content	Check that: <ul style="list-style-type: none"> • PC sound card, speakers and microphone are correctly connected • the Mute button is not pressed • the volume in and volume out settings are correct • all cabling is connected
No audio signal from PC to the audio module when passing a proxy server	The Post Content Length set in the proxy server is too low. Set the value of the Post Content Length in your proxy server to 1MB or more. You may need to contact your system administrator to do this.
No full-duplex function	Incorrect configuration. Check the setting in the camera's Setup pages. Sound card does not support full-duplex. For information on how to check if your sound card supports full-duplex, please visit www.axis.com and see the support section for Axis camera products.
Poor performance	Too many users/clients connected. Try limiting the number of clients allowed to connect. Low bandwidth. Reduce the Speed setting on the Audio settings page. Setting lower speed will reduce any break-up in the sound, but will also increase the transmission delay. If running in Full-Duplex mode, try switching to Half-Duplex mode.
Whining or screeching sound from speakers (feedback)	Poor positioning of speakers and/or microphone. Relocate the speakers or microphone so that they do not point towards each other, and/or lower the volume.
The audio module works locally, but not externally	Check the Internet firewall with your system administrator. Check if you need to configure the default router settings.

For additional assistance, please contact your reseller or check the product's support pages on the Axis Website at <http://www.axis.com/techsup>

Technical Specifications

Detail	Specification
System Requirements	Standard Internet TCP/IP suite of protocols: Windows, Linux, UNIX, Mac. etc.
Supported Web Browsers	Windows - Microsoft Internet Explorer 5.x or later and Mozilla 1.4 or later Linux - Mozilla 1.4 or later Mac OSX - Netscape 7.x or later or Mozilla 1.4 or later.
Audio	Windows - Microsoft Internet Explorer 5.x or later.
Installation	Physical network connection using RJ-45 twisted pair cable. External connection module for audio, video and I/O connectors (optional).
Management	Remote configuration and status using Web-based tools.
Compression	Motion-JPEG, as well as single snapshot JPEG images. User-controlled compression level.
Video Features	Time stamp, text overlay, image overlay, image rotation Color control (B/W or color).
Networking	10baseT Ethernet or 100baseTX Fast Ethernet, TCP/IP, HTTP, FTP, SMTP, NTP, ARP, BOOTP, DNS, UPnP, SOCKS v.4.0/v.5.0.
General I/O	2 digital inputs and 3 relay outputs (max 24V, 0.1 A) available on the connection module (optional accessory).
Pre/Post Alarm Buffer	Memory available for pre/post alarm image storage: up to 6MB
Security	Multi-user password protection, IP address filtering
Operating Conditions:	Temp: 0°C (32°F) to 40°C (104°F), Humidity: 20-80% RHG.
Approvals EMC	EN55022:1998 Class B EN55024:1998/A1:2001 EN61000-3-2:2000 EN61000-3-3:1995/A1:2001 FCC Part 15, Subpart B, Class B Canada ICES-003 Class B VCCI, Class B C-Tick, AS/NZS 3548
Approvals - Safety	EN 60950, UL, CSA, AS, SISIR, FIMKO (AC Adapter)
Metrics	Height: min/max 4.33"/5.12" (110/130mm) Width: 4.09" (104mm). Weight: 1.55 lb. (700g), excluding power supply & connection module.
Hardware	ARTPEC-2 compression chip ETRAX-100 LX (32-bit RISC, 100MIPS CPU). 32 MB RAM, 4 MB FLASH
Optics	Lens type: 26x optical zoom 12x digital zoom Lens: 3.5 MM. – 91 MM., F1.6 – F4.0 Focus region: Wide: 0.01 m to ∞ Tele: 1.6 m to ∞, Auto/ Manual Horizontal angle of view: 42° (Wide) - 1.7° (Telephoto)

Detail	Specification		
Image	Image Chip (CCD):	¼" Interlaced CCD	
	Total number of pixels:	NTSC - 340,000 effective pixels PAL - 400,000 effective pixels	
	Horizontal Resolution:	NTSC - 460 TV lines PAL - 420 TV lines	
	Vertical Resolution:	350 TV lines	
	S/N Ratio:	48 dB	
	Shutter speed:	NTSC- 1/80,000 to 1/60 to 1/1sec. PAL- 1/80,000 to 1/50 to 1/1 sec.	
	White balance:	Auto / manual / Hold current	
	Digital video resolutions:	PAL - 768x576 at up to 25 fps NTSC - 704x480 at up to 30 fps	
	Mechanisms	Minimum illumination:	1 lux (at 1/30 s) in normal mode and no light at all in IR mode with integrated IR lighting.
		Night mode Infrared lighting:	LEDs (4) Effective lighting range: 3 m (9.8 ft.)
Infrared cut filter:		Power-driven insertion/removal (normal mode/night mode)	
Pan:		340 degrees	
Tilt:		+10/-90 degrees (ceiling mount) +90/-10 degrees (desktop)	
Rotation speed:		Pan: 1 to 90°/s, Tilt: 1 to 70°/s	
Preset positions:		20 preset positions	
Lens filter mount:		diameter: 37 MM. pitch: 0.75 MM.	
Power	External power supply included:	In: 230/110V AC 50/60Hz Out: 13VDC 1.8A	
Complimentary Software	AXIS Media Control (AMC) - ActiveX component software required for Microsoft Internet Explorer, installed automatically on first use.	Optional: AXIS IP Utility - Windows installation. Available from http://www.axis.com	
Axis Chipset Technology	Axis renowned chipset technology is built upon an open architecture that is streamlined to provide device connectivity, independent of any file server. AXIS 213 is driven by a powerful AXIS ETRAX 32-bit RISC processor and includes the AXIS ARTPEC-2 which is a dedicated digital video surveillance compression chip.		

Detail	Specification
Connection Module (optional accessory)	Full-duplex audio. Audio data encoded in: <ul style="list-style-type: none"> • ADPCM format at 32kbps, 8 kHz sampling (G.726) • ADPCM format at 24kbps, 8 kHz sampling (G.726) • PCM μ-law format at 64kbps, 8kHz sampling (G.711) Data sent using HTTP. Microphone Input - 1-40mVpp. PC type. Line Out - Unbalanced, max. 2.6Vpp. Maximum number of users (audio) - 10 (on local area network). RS-232C - 9-pin D-SUB serial connector. Composite video in/out. 2 digital inputs and 3 relay outputs (max 24V, 0.1 A) Metrics - Height: 0.9" (23mm), Width: 2.64" (67mm), Length: 5.08" (129mm).

The AXIS 213 delivers the following file sizes (PAL):

PAL			PAL aspect ratio corrected		
	Resolution	Min-Max (KB)		Resolution	Min-Max (KB)
4CIF/4CIF-Quad	704x576	10 - 300	4CIF/4CIF-Quad	768x576	11 - 330
2CIF expanded	704x576	10 - 250	2CIF expanded	768x576	11 - 270
2CIF	704x288	5 - 150	2CIF	768x288	5.5 - 160
CIF/CIF-Quad	352x288	2.5 - 80	CIF/CIF-Quad	384x288	2.7 - 90
QCIF	176x144	1 - 20	QCIF	192x144	1.1 - 22

The AXIS 213 delivers the following file sizes (NTSC):

NTSC			NTSC aspect ratio corrected		
	Resolution	Min-Max (KB)		Resolution	Min-Max (KB)
4CIF/4CIF-Quad	704x480	8 - 250	4CIF/4CIF-Quad	640x480	7 - 230
2CIF expanded	704x480	8 - 200	2CIF expanded	640x480	7 - 180
2CIF	704x240	4 - 125	2CIF	640x240	3.5 - 110
CIF/CIF-Quad	352x240	2 - 70	CIF/CIF-Quad	320x240	1.8 - 60
QCIF	176x120	0.8 - 15	QCIF	160x120	0.7 - 14

Index

A

- About 20
- Action 32
- Action Buttons 15, 28
- Active/Inactive 15, 28
- ActiveX Controls 14
- Administrator 18, 36
- Alarm 20, 32, 43
- AMC 9, 14, 15, 50
- ARP and Ping 11, 12
- Audio 19, 43
- Audio Settings 19
- AXIS Internet Dynamic DNS Service 13
- AXIS IP Utility 10
- AXIS Media Control 9

B

- Background color 26
- Background picture 26
- Backup 40
- Banner 26
- Banner link 26
- Basic Configuration 19
- Brightness 21
- Buffer Size 34
- Buffers 34

C

- CGI links 27
- Color Setting 21
- Compression 21
- Connection Module 7, 43
- Control Button 42
- Customize 26

D

- Date & Time 19, 20, 37
- Default 40
- Default Viewer 28
- DNS Configuration 38
- DNS Server 38
- Domain Name 38

E

- Event 32
- Event Configuration 20
- Event Servers 20, 32
- Event Types 20, 33
- External Video 30

F

- Factory Default 42
- File Sizes (NTSC) 51
- File Sizes (PAL) 51
- Frame Rate 22
- FTP Server 32

H

- Host Name 38
- HTML Examples 19, 28
- HTTP API 27
- HTTP Server 32

I

- Image Settings 19
- IP Address Filtering 20, 36
- IR Light 6

L

- Layout 19
- Live View 18
- Live View Config 19, 26
- Logo 26
- Logo link (URL) 26

Logs & Reports 20, 41

M

Maintenance 20

N

Network 20, 37
Network Connector 6
Network Indicator 6
New Server Time 37
NTP Server 37

O

Operator 36
Output Buttons 15, 28
Overlay Image 19, 22
Overlay Settings 21
Own Home Page 27

P

Pan/Tilt/Zoom Control Queue 17
Pan/Tilt/Zoom Controls 16
PHP 41
Pinout 40
Pinout - I/O connectors 43
Plain Config 20
Port Status 20, 35
Ports & Devices 40
Post-trigger Buffer 34
Power Connector 6
Pre-trigger Buffer 34
PTZ Commands 27
Pulse 15, 28

R

Referrals 36
Reset Button 6
Resolution 21
Restart 40

Restore 40
Rotate Image 21

S

Scheduled Event 32, 35
Scripting 20
Security 20, 36
Security/Users 36
Sequence Mode 15, 30
Serial Number 6
Services 37
Setup Tools 19
SMTP 20, 39
Snapshot 15
SOCKS 20, 39
Support 41
Support Overview 20
System Options 20, 36

T

TCP Server 32
TCP/IP 19, 20
Text color 26
Time Mode 37
Triggered Event 32, 33
Troubleshooting 45

U

Upgrade Server 40
UPnP 20, 39
User 19, 36
User Defined Links 27
User List 36

V

Video & Image 19
Video Inputs 6
Video Stream 22
View Size 15

