AXIS Q17 Series

AXIS Q1785–LE Network Camera

AXIS Q1786–LE Network Camera

User Manual
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About this manual

This User Manual provides information on the product regarding:

- Access
- Main use cases
- Troubleshooting
- Specifications

Note

The User Manual may include more than one product. Part of the content, e.g. some use cases or specifications, may only apply to some of them. For more information on the exact feature set and specifications, see the product’s web page and datasheet at www.axis.com
AXIS Q17 Series

Solution overview

Solution overview
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Product overview

Product overview

1 Network connector
2 Part number (P/N) & Serial number (S/N)
3 Safety wire
4 Power connector
5 I/O connector
6 Audio connector
7 Control button
8 microSD card slot
9 Function button
10 Status LED indicator

1 IDC network connector
2 Foot
3 Grounding screw
4 Mounting plate
To find Axis devices on the network and assign them IP addresses in Windows®, use AXIS IP Utility or AXIS Device Manager. Both applications are free and can be downloaded from axis.com/support.

For more information about how to find and assign IP addresses, see the document How to assign an IP address and access your device on the device page at axis.com.

Access the device

1. Open a browser and enter the IP address or host name of the Axis device.

   If you have a Mac computer (OS X), go to Safari, click on Bonjour and select the device from the drop-down list. To add Bonjour as a browser bookmark, go to Safari > Preferences.

   If you do not know the IP address, use AXIS IP Utility or AXIS Device Manager to find the device on the network.

2. Enter the username and password. If you access the device for the first time, you must set the root password. See Set a secure password for the root account on page 6.

3. The live view page opens in your browser.

Secure passwords

**Important**

Axis devices send the initially set password in clear text over the network. To protect your device after the first login, set up a secure and encrypted HTTPS connection and then change the password.

The device password is the primary protection for your data and services. Axis devices do not impose a password policy as they may be used in various types of installations.

To protect your data we strongly recommend that you:

- Use a password with at least 8 characters, preferably created by a password generator.
- Don’t expose the password.
- Change the password at a recurring interval, at least once a year.

Set a secure password for the root account

**Important**

The default administrator username is root. If the password for root is lost, reset the device to factory default settings.

1. Type a password. Follow the instructions about secure passwords. See Secure passwords on page 6.

2. Retype the password to confirm the spelling.

3. Click Create login. The password has now been configured.
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Webpage overview

1. Live view control bar
2. Live view
3. Product name
4. User information, color themes, and help
5. Video control bar
6. Settings toggle
Need more help?

You can access the built-in help from the device's webpage. The help provides more detailed information on the device's features and their settings.

Long-distance connections

This product supports fiber-optic cable installations through a media converter. Fiber-optic cable installations offer a number of benefits such as:

- Long-distance connection
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- High speed
- Long lifetime
- Large capacity of data transmission
- Electromagnetic interference immunity

Find out more about fiber-optic cable installations on axis.com/technologies/fiber-optics.

For information about how to install the media converter see the Installation Guide for this product.

Image quality

Capture modes

Capture mode defines the maximum frame rate available in the Axis product. Depending on which capture mode you select, you may not be able to use WDR.

Which capture mode to choose depends on the requirements of frame rate and resolution for the specific surveillance setup. For specifications about available capture modes, see the product’s datasheet at axis.com.

Select capture mode

Which capture mode to choose depends on the requirements of frame rate and resolution for the specific surveillance setup. For specifications about available capture modes, see the product’s datasheet. To find the latest version of the datasheet, go to axis.com.

Select exposure mode

There are different exposure mode options in the camera that adjusts aperture, shutter speed, and gain to improve image quality for specific surveillance scenes. Go to Settings > Image > Exposure and select between the following exposure modes:

- For most use cases, select Automatic exposure.
- For environments with certain artificial lighting, for example fluorescent lighting, select Flicker-free.
  
  Select the same frequency as the power line frequency.

- For environments with certain artificial light and bright light, for example outdoors with fluorescent lighting at night and sun during daytime, select Flicker-reduced.
  
  Select the same frequency as the power line frequency.

- To lock the current exposure settings, select Hold current.

Adjust the focus

This product has three focus modes:

- Auto: The camera automatically adjusts focus based on the entire image.
- Area: The camera automatically adjusts focus based on a selected area of the image.
- Manual: The focus is set manually at a fixed distance.

To turn off autofocus and adjust the focus manually:

1. In the live view window, if the Zoom slider is visible, click Zoom and select Focus.
2. Click M and use the slider to set the focus.
Benefit from IR light in low-light conditions using night mode

Your camera uses visible light to deliver color images during the day. As the available light diminishes, you can set the camera to automatically shift to night mode, in which the camera uses both visible light and near-infrared light to deliver black-and-white images. Since the camera uses more of the available light it can deliver brighter, more detailed, images.

1. Go to Settings > Image > Day and night, and make sure that the IR cut filter is set to Auto.
2. To determine at what light level you want the camera to shift to night mode, move the Threshold slider toward Bright or Dark.
3. Enable Allow IR illumination and Synchronize IR illumination to use the camera’s IR light when night mode is activated.

Note
If you set the shift to occur when it's brighter, the image remains sharper as there will be less low-light noise. If you set the shift to occur when it's darker, the image colors are maintained for longer, but there will be more image blur due to low-light noise.

Reduce noise in low-light conditions

To reduce noise in low-light conditions, you can adjust one or more of the following settings:

• Set the exposure mode to automatic.

Note
A high max shutter value can result in motion blur.

• To slow down the shutter speed, set max shutter to the highest possible value.
• Reduce sharpness in the image.
• Set the max gain to a lower value.

Maximize details in an image

Important
If you maximize details in an image, the bitrate will probably increase and you might get a reduced frame rate.

• Set the compression as low as possible.
• Select MJPEG streaming.
• Turn off Zipstream functionality.

Handle scenes with strong backlight

Dynamic range is the difference in light levels in an image. In some cases the difference between the darkest and the brightest areas can be significant. The result is often an image where either the dark or the bright areas are visible. Wide dynamic range (WDR) makes both dark and bright areas of the image visible.

1. Go to Settings > Image > Wide dynamic range.
2. If required, turn on WDR.
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**Setup**

*Image without WDR.*

*Image with WDR.*

**Note**

WDR may cause artifacts in the image.

Find out more about WDR and how to use it at axis.com/web-articles/wdr.

**Stabilize a shaky image with Electronic Image Stabilization (EIS)**

Electronic Image Stabilization (EIS) can be used in environments where the product is mounted in an exposed location and subject to vibrations, for example, wind or passing traffic. Turn on EIS to get a smoother and steadier image without blur.

EIS also reduces the file size of the compressed image and lowers the bitrate of the video stream.

**Note**

When EIS is turned on the image is cropped slightly, lowering the maximum resolution.

1. Go to Settings > Image > Image correction.
2. Turn on EIS.

**Compensate for barrel distortion**

Barrel distortion is a phenomenon where straight lines appear increasingly bent closer to the edges of the frame. A wide field of view often creates barrel distortion in an image. Barrel distortion correction compensates for this distortion.

**Note**

Barrel distortion correction affects the image resolution and field of view.

1. Go to Settings > Image > Image correction.
2. Turn on Barrel distortion correction (BDC).
3. Set the level of correction that gives you the best image.
Monitor long and narrow areas

Use corridor format to better utilize the full field of view in a long and narrow area, for example a staircase, hallway, road, or tunnel.

1. Depending on your device, turn the camera or the 3-axis lens in the camera 90° or 270°.
2. If the device doesn’t rotate the view automatically, log in to the webpage and go to Settings > System > Orientation.
3. Click .
4. Rotate the view 90° or 270°.

Find out more at axis.com/axis-corridor-format.

Improve license plate recognition

To better recognize the license plate of a car passing by the camera, you can apply and adjust a number of things.

One option is to use the pixel counter in your camera to set the optimal pixel resolution:

1. Go to Settings > System > Orientation and click .
2. Adjust the size and placement of the rectangle in the camera’s live view around the area of interest, for example where the license plates of passing cars are expected to appear. You can then see the number of pixels represented by the sides of the rectangle.

Note

You can use an object of a known size in the view as a reference to decide how much resolution is needed for recognition.

In addition, you can try to adjust the following to optimize license plate recognition:

- Shutter speed
- Gain
- Zoom

Optimize the image for traffic surveillance

To get the best possible image for traffic surveillance, use the AXIS Traffic Wizard in combination with the Traffic overview scene profile.

1. Go to Settings > Apps > AXIS Traffic Wizard.
2. Start the application if it is not already running.
3. To set up the application, click Open.
4. Select units (metric or imperial).
5. Enter the values for Road distance, Camera height, Vehicle distance and Max speed.
6. To make both dark and bright areas of the image visible, turn on WDR.
7. Set the level of low-light gain depending on the light conditions.
8. If external IR illumination is available, select the Supplemental IR illumination checkbox.
9. Click Save.
10. Go to System > Orientation.
11. Select Traffic overview under Scene profile.
12. Click Done.

Privacy masks
A privacy mask is a user-defined area that covers a part of the monitored area. In the video stream, privacy masks appear either as blocks of solid color or with a mosaic pattern.

The privacy mask is relative to the pan, tilt, and zoom coordinates, so regardless of where you point the camera, the privacy mask covers the same place or object.

You’ll see the privacy mask on all snapshots, recorded video, and live streams.

You can use the VAPIX® application programming interface (API) to turn off the privacy masks.

**Important**
If you use multiple privacy masks it may affect the product’s performance.

Hide parts of the image with privacy masks
Create a privacy mask to hide a part of the image:
1. Go to Settings > Privacy mask.
2. Click New.

Overlays
Overlays are superimposed over the video stream. They are used to provide extra information during recordings, such as a timestamp, or during product installation and configuration. You can add either text or an image.

Show an image overlay
To add an image as an overlay in the video stream:
1. Go to Settings > Overlay.
2. Click Image list.
3. Upload an image and click Done.
4. Click Create overlay.
5. Select Image and click Create.
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6. Select the image from the drop-down list.
7. To position the image overlay, choose Custom or one of the presets.
8. Click Create.

Show a text overlay in the video stream when the device detects motion

This example explains how to display the text “Motion detected” when the device detects motion:

Make sure the AXIS Video Motion Detection application is running:

1. Go to Settings > Apps > AXIS Video Motion Detection.
2. Start the application if it is not already running.
3. Make sure you have set up the application according to your needs.

Add the overlay text:

4. Go to Settings > Overlay.
5. Select Create overlay and select Text overlay.
6. Enter #D in the text field.
7. Choose text size and appearance.
8. To position the text overlay, choose Custom or one of the presets.

Create a rule:

9. Go to System > Events > Rules and add a rule.
10. Type a name for the rule.
11. In the list of conditions, select AXIS Video Motion Detection.
12. In the list of actions, select Use overlay text.
13. Select a view area.
14. Type “Motion detected”.
15. Set the duration.
16. Click Save.

Note
If you update the overlay text it will be automatically updated on all video streams dynamically.

Pan, tilt, and zoom (PTZ)

Limit the zoom movements

If there are parts of the scene that you don’t want the camera to be able to zoom in on, you can limit the maximum zoom level. For example, you want to protect the privacy of residents in an apartment building, which is located close to a parking lot that you intend to monitor. To limit the maximum zoom level, go to Settings > PTZ > Limits.
Guard tours
A guard tour displays the video stream from different preset positions either in a predetermined or random order, and for configurable periods of time. Once started, a guard tour continues to run until stopped, even when there are no clients (web browsers) viewing the images.

Create a guard tour with preset positions
A guard tour displays the video stream from different preset positions either in a predetermined or random order, and for configurable periods of time.

1. Go to Settings > PTZ > Guard tours.
2. Click +.
3. Select Preset position.
4. To edit the guard tour’s properties, click 📊.
5. Type a name for the guard tour and specify the pause length in minutes between each tour.
6. If you want the guard tour to go to the preset positions in a random order, turn on Shuffle.
7. Click Done.
8. Click Add to add the preset positions that you want in your guard tour.
9. Click Done to exit the guard tour settings.
10. To schedule the guard tour, go to System > Events.

Streaming and storage

Bitrate control
By setting the bitrate control you can manage the bandwidth consumption for your video stream.

Variable bitrate (VBR)
With variable bitrate the bandwidth varies based on the level of activity in the scene. The more activity in the scene, the more bandwidth is required. This option guarantees that image quality is constant but requires storage margins.

Maximum bitrate (MBR)
The maximum bitrate option allows you to set a target bitrate value to be able to handle system bitrate limitations. To keep the instantaneous bitrate below the specified target bitrate, there may be a decrease in image quality or the frame rate may decrease. You have the option to prioritize either image quality or frame rate. It is recommended to configure the target bitrate higher than the expected bitrate to have margins for additional complexity that needs to be captured.

Average bitrate (ABR)
With average bitrate, the bitrate is automatically adjusted over a longer timescale to meet the specified target and provide the best quality on the video stream based on available storage. Image quality is decreased uniformly. You can still get good image quality when there is activity in the scene. The average bitrate option allows you to define the total storage required to store the video stream for a specified amount of time (retention time) when image quality is adjusted to meet the specified target bitrate. Specify the average bitrate settings in one of the following ways:

- Set the target bitrate and the retention time to calculate the estimated storage need.
- Use the target bitrate calculator to calculate the average bitrate, based on available storage and desired retention time.

You have also the option to turn on maximum bitrate to specify a bitrate limit.
Setup

Video compression formats

Decide which compression method to use based on your viewing requirements, and on the properties of your network. The available options are:

Motion JPEG

Note

To ensure support for the Opus audio codec, the Motion JPEG stream is always sent over RTP.

Motion JPEG, or MJPEG, is a digital video sequence that is made up of a series of individual JPEG images. These images are then displayed and updated at a rate sufficient to create a stream that shows constantly updated motion. For the viewer to perceive motion video the rate must be at least 16 image frames per second. Full motion video is perceived at 30 (NTSC) or 25 (PAL) frames per second.

The Motion JPEG stream uses considerable amounts of bandwidth, but provides excellent image quality and access to every image contained in the stream.

H.264 or MPEG-4 Part 10/AVC

Note

H.264 is a licensed technology. The Axis product includes one H.264 viewing client license. To install additional unlicensed copies of the client is prohibited. To purchase additional licenses, contact your Axis reseller.

H.264 can, without compromising image quality, reduce the size of a digital video file by more than 80% compared to the Motion JPEG format and by as much as 50% compared to the MPEG-4 standard. This means that less network bandwidth and storage space are required for a video file. Or seen another way, higher video quality can be achieved for a given bitrate.

Reduce bandwidth and storage

Important

If you reduce the bandwidth it can result in loss of details in the picture.

1. Go to live view and select H.264.
2. Go to Settings > Stream.
3. Do one or more of the following:
   - Turn on the Zipstream functionality and select the desired level.
   - Turn on dynamic GOP and set a high GOP length value.
   - Increase the compression.
   - Turn on dynamic FPS.

Set up network storage

To store recordings on the network, you need to set up network storage:

1. Go to Settings > System > Storage.
2. Click Setup under Network storage.
3. Enter the IP address of the host server.
4. Enter the name of the shared location on the host server.
5. Move the switch if the share requires a login, and enter username and password.
6. Click Connect.
Add audio to your recording

Edit the stream profile which is used for the recording:

1. Go to Settings > Stream and click Stream profiles.
2. Select the stream profile and click Audio.
3. Select the checkbox and select Include.
4. Click Save.
5. Click Close.

How do Image, Stream, and Stream profile settings relate to each other?

The Image tab contains camera settings that affect all video streams from the product. If you change something in this tab, it immediately affects all video streams and recordings.

The Stream tab contains settings for video streams. You get these settings if you request a video stream from the product and don’t specify for example resolution, or frame rate. When you change the settings in the Stream tab, it doesn’t affect ongoing streams, but it will take effect when you start a new stream.

The Stream profiles settings override the settings from the Stream tab. If you request a stream with a specific stream profile, the stream contains the settings of that profile. If you request a stream without specifying a stream profile, or request a stream profile that doesn’t exist in the product, the stream contains the settings from the Stream tab.

Record and watch video

To record video you must first set up network storage, see Set up network storage on page 16, or have an SD card installed.

1. Go to the camera’s live view.
2. Click on Record once to start recording and one more time to stop recording.

To watch your recording:

1. Click on Storage > Go to recordings.
2. Select your recording in the list and it will play automatically.

Events

Set up rules and alerts

You can create rules to make your device perform an action when certain events occur. A rule consists of conditions and actions. The conditions can be used to trigger the actions. For example, the device can start a recording or send an email when it detects motion, or show an overlay text when it records.

Trigger an action

1. Go to Settings > System > Events to set up a rule. The rule defines when the camera will perform certain actions. Rules can be setup as scheduled, recurring, or for example, triggered by motion detection.
2. Select the Condition that must be met to trigger the action. If you specify more than one condition for the rule, all of the conditions must be met to trigger the action.
3. Select which Action the camera should perform when the conditions are met.

Note

If you make changes to an active rule, then the rule needs to be restarted for the changes to take effect.
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**Note**
If you change the definition of a stream profile that is used in a rule, then you need to restart all the rules that use that stream profile.

**Record video when the camera detects motion**
This example explains how to set up the camera to start recording to the SD card five seconds before it detects motion and to stop one minute after.

Make sure the AXIS Video Motion Detection application is running:

1. Go to Settings > Apps > AXIS Video Motion Detection.
2. Start the application if it is not already running.
3. Make sure you have set up the application according to your needs.

Create a rule:

1. Go to Settings > System > Events and add a rule.
2. Type a name for the rule.
3. In the list of conditions, under Application, select AXIS Video Motion Detection (VMD).
4. In the list of actions, under Recordings, select Record video while the rule is active.
5. Select an existing stream profile or create a new one.
6. Set the prebuffer time to 5 seconds.
7. Set the postbuffer time to 60 seconds.
8. In the list of storage options, select SD card.
9. Click Save.

**Record video when a PIR detector senses motion**
This example explains how to connect an Axis PIR detector to the camera, and set up the camera to start recording when the detector senses motion.

**Required hardware**
- 3-wire cable (ground, power, I/O)
- Axis PIR detector

**NOTICE**
Disconnect the camera from power before connecting the wires. Reconnect to power after all connections are done.

**Connect the wires to the camera's I/O connector**

**Note**
For information on the I/O connector, see Connectors on page 25.

1. Connect the ground wire to pin 1 (GND/-).
2. Connect the power wire to pin 2 (12V DC output).
3. Connect the I/O wire to pin 3 (I/O input).

Connect the wires to the PIR detector's I/O connector
1. Connect the other end of the ground wire to pin 1 (GND/-).
2. Connect the other end of the power wire to pin 2 (DC input/+).
3. Connect the other end of the I/O wire to pin 3 (I/O output).

Configure the I/O port in the camera’s webpage
1. Go to Settings > System > I/O ports.
2. Select Input in the Port 1 drop-down list.
3. Give the input module a descriptive name.
4. To make the PIR detector send a signal to the camera when it senses motion, select Closed circuit in the drop-down list.

To trigger the camera to start recording when it receives a signal from the PIR detector, you need to create a rule in the camera’s webpage.

Zoom in on a specific area automatically with gatekeeper
This example explains how to use the gatekeeper functionality to make the camera zoom in automatically on the license plate of a car that passes through a gate. When the car has passed, the camera zooms out to the home position.

Create the preset positions:
1. Go to Settings > PTZ > Preset positions.
2. Create the home position that includes the entrance of the gate.
3. Create the zoomed-in preset position so that it covers the area in the image where you assume that the license plate will appear.

Create a motion detection profile:
1. Go to Settings > Apps and open AXIS Video Motion Detection.
2. Create a profile that covers the entrance of the gate and then save the profile.

Create a rule:
1. Go to Settings > System > Events and add a rule.
2. Name the rule “Gatekeeper”.
3. In the list of conditions, under Application, select the motion detection profile.
4. In the list of actions, under Preset positions, select Go to preset position.
5. Select a Video channel.
6. Select the Preset position.
7. To make the camera wait a while before it returns to the home position, select Home timeout, and set a time.
8. Click Save.
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**Setup**

**Record video when the camera detects impact**

Shock detection allows the camera to detect tampering caused by vibrations or shock. Vibrations due to the environment or to an object can trigger an action depending on the shock sensitivity range, which can be set from 0 to 100. In this scenario, someone is throwing rocks at the camera after hours and you would like to get a video clip of the event.

Turn on shock detection:

1. Go to Settings > System > Detectors.
2. Turn on shock detection, and set a value for the shock sensitivity.

Create a rule:

1. Go to Settings > System > Events and add a rule.
2. Type a name for the rule.
3. In the list of conditions, under Device status, select Shock detected.
4. Click + to add a second condition.
5. In the list of conditions, under Scheduled and recurring, select Scheduled event.
6. In the list of schedules, select After hours.
7. In the list of actions, under Recordings, select Record video while the rule is active.
8. Select a Camera.
9. Set the prebuffer time to 5 seconds.
10. Set the postbuffer time to 60 seconds.
11. Select where to save the recordings.
12. Click Save.

**Applications**

AXIS Camera Application Platform (ACAP) is an open platform that enables third parties to develop analytics and other applications for Axis products. To find out more about available applications, downloads, trials and licenses, go to axis.com/applications.

To find the user manuals for Axis applications, go to axis.com.

**Note**

- Several applications can run at the same time but some applications might not be compatible with each other. Certain combinations of applications might require too much processing power or memory resources when run in parallel. Verify that the applications work together before deployment.
Troubleshooting

If you can’t find what you’re looking for here, try the troubleshooting section at axis.com/support.

Reset to factory default settings

Important
Reset to factory default should be used with caution. A reset to factory default resets all settings, including the IP address, to the factory default values.

To reset the product to the factory default settings:

1. Disconnect power from the product.
2. Press and hold the control button while reconnecting power. See Product overview on page 5.
3. Keep the control button pressed for 15–30 seconds until the status LED indicator flashes amber.
4. Release the control button. The process is complete when the status LED indicator turns green.
5. Use the installation and management software tools to assign an IP address, set the password, and access the video stream.

The installation and management software tools are available from the support pages on axis.com/support.

It is also possible to reset parameters to factory default through the web interface. Go to Settings > System > Maintenance and click Default.

Check the current firmware

Firmware is the software that determines the functionality of network devices. One of your first actions when troubleshooting a problem should be to check the current firmware version. The latest version may contain a correction that fixes your particular problem.

To check the current firmware:

1. Go to the product’s webpage.
2. Click on the help menu.
3. Click About.

Upgrade the firmware

Important
Preconfigured and customized settings are saved when the firmware is upgraded (provided that the features are available in the new firmware) although this is not guaranteed by Axis Communications AB.

Important
Make sure the product remains connected to the power source throughout the upgrade process.

Note
When you upgrade the product with the latest firmware in the active track, the product receives the latest functionality available. Always read the upgrade instructions and release notes available with each new release before upgrading the firmware. To find the latest firmware and the release notes, go to axis.com/support/firmware.
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Troubleshooting

1. Download the firmware file to your computer, available free of charge at axis.com/support/firmware.
2. Log in to the product as an administrator.
3. Go to Settings > System > Maintenance. Follow the instructions on the page. When the upgrade has finished, the product restarts automatically.

AXIS Device Manager can be used for multiple upgrades. Find out more at axis.com/products/axis-device-manager.

Technical issues, clues and solutions

If you can't find what you're looking for here, try the troubleshooting section at axis.com/support.

Problems upgrading the firmware

<table>
<thead>
<tr>
<th>Problem</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware upgrade failure</td>
<td>If the firmware upgrade fails, the device reloads the previous firmware. The most common reason is that the wrong firmware file has been uploaded. Check that the name of the firmware file corresponds to your device and try again.</td>
</tr>
</tbody>
</table>

Problems after firmware upgrade

If you experience problems after a firmware upgrade, roll back to the previously installed version from the Maintenance page.

Problems setting the IP address

<table>
<thead>
<tr>
<th>Problem</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The device is located on a different subnet</td>
<td>If the IP address intended for the device and the IP address of the computer used to access the device are located on different subnets, you cannot set the IP address. Contact your network administrator to obtain an IP address.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem</th>
<th>Description</th>
</tr>
</thead>
</table>
| The IP address is being used by another device | Disconnect the Axis device from the network. Run the ping command (in a Command/DOS window, type ping and the IP address of the device):

  • If you receive: Reply from <IP address>: bytes=32; time=10...
  • this means that the IP address may already be in use by another device on the network.
  • Obtain a new IP address from the network administrator and reinstall the device.
  • If you receive: Request timed out, this means that the IP address is available for use with the Axis device. Check all cabling and reinstall the device. |

<table>
<thead>
<tr>
<th>Problem</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible IP address conflict with another device on the same subnet</td>
<td>The static IP address in the Axis device is used before the DHCP server sets a dynamic address. This means that if the same default static IP address is also used by another device, there may be problems accessing the device.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem</th>
<th>Description</th>
</tr>
</thead>
</table>
| The device cannot be accessed from a browser | When HTTPS is enabled, ensure that the correct protocol (HTTP or HTTPS) is used when attempting to log in. You may need to manually type http or https in the browser’s address field.

  • If the password for the user root is lost, the device must be reset to the factory default settings. See Reset to factory default settings on page 21. |

<table>
<thead>
<tr>
<th>Problem</th>
<th>Description</th>
</tr>
</thead>
</table>
| The IP address has been changed by DHCP | IP addresses obtained from a DHCP server are dynamic and may change. If the IP address has been changed, use AXIS IP Utility or AXIS Device Manager to locate the device on the network. Identify the device using its model or serial number, or by the DNS name (if the name has been configured).

  • If required, a static IP address can be assigned manually. For instructions, go to axis.com/support. |

The device is accessible locally but not externally

To access the device externally, we recommend using one of the following applications for Windows®:

  • AXIS Companion: free of charge, ideal for small systems with basic surveillance needs.
  • AXIS Camera Station: 30-day trial version free of charge, ideal for small to mid-size systems.

For instructions and download, go to axis.com/products/axis-companion.
Troubleshooting

Problems with streaming

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicast H.264 only accessible by local clients</td>
<td>Check if your router supports multicasting, or if the router settings between the client and the device need to be configured. The TTL (Time To Live) value may need to be increased.</td>
</tr>
<tr>
<td>No multicast H.264 displayed in the client</td>
<td>Check with your network administrator that the multicast addresses used by the Axis device are valid for your network. Check with your network administrator to see if there is a firewall preventing viewing.</td>
</tr>
<tr>
<td>Poor rendering of H.264 images</td>
<td>Ensure that your graphics card is using the latest driver. The latest drivers can usually be downloaded from the manufacturer’s website.</td>
</tr>
<tr>
<td>Color saturation is different in H.264 and Motion JPEG</td>
<td>Modify the settings for your graphics adapter. Go to the adapter’s documentation for more information.</td>
</tr>
<tr>
<td>Lower frame rate than expected</td>
<td>• See Performance considerations on page 23. • Reduce the number of applications running on the client computer. • Limit the number of simultaneous viewers. • Check with the network administrator that there is enough bandwidth available. • Lower the image resolution.</td>
</tr>
</tbody>
</table>

Performance considerations

When setting up your system, it is important to consider how various settings and situations affect the performance. Some factors affect the amount of bandwidth (the bitrate) required, others can affect the frame rate, and some affect both. If the load on the CPU reaches its maximum, this also affects the frame rate.

The following factors are the most important to consider:

- High image resolution or lower compression levels result in images containing more data which in turn affects the bandwidth.
- Rotating the image in the GUI will increase the product’s CPU load.
- Access by large numbers of Motion JPEG or unicast H.264 clients affects the bandwidth.
- Simultaneous viewing of different streams (resolution, compression) by different clients affects both frame rate and bandwidth.

Use identical streams wherever possible to maintain a high frame rate. Stream profiles can be used to ensure that streams are identical.

- Accessing Motion JPEG and H.264 video streams simultaneously affects both frame rate and bandwidth.
- Heavy usage of event settings affects the product’s CPU load which in turn affects the frame rate.
- Using HTTPS may reduce frame rate, in particular if streaming Motion JPEG.
- Heavy network utilization due to poor infrastructure affects the bandwidth.
- Viewing on poorly performing client computers lowers perceived performance and affects frame rate.
- Running multiple AXIS Camera Application Platform (ACAP) applications simultaneously may affect the frame rate and the general performance.
AXIS Q17 Series

Specifications

Specifications

To find the latest version of the product's datasheet, go to the product page at axis.com and locate Support & Documentation.

LED Indicators

<table>
<thead>
<tr>
<th>Status LED</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlit</td>
<td>Connection and normal operation.</td>
</tr>
<tr>
<td>Green</td>
<td>Steady green for 10 seconds for normal operation after startup completed.</td>
</tr>
<tr>
<td>Amber</td>
<td>Steady during startup. Flashes during firmware upgrade or reset to factory default.</td>
</tr>
<tr>
<td>Amber/Red</td>
<td>Flashes amber/red if network connection is unavailable or lost.</td>
</tr>
</tbody>
</table>

**Buzzer**

**Buzzer signal for leveling assistant**

Press and hold the function button for more than two seconds to level the camera.

- When the camera is level, the beep is continuous.
- When the camera is not level, the beep occurs at slow intervals.

**SD card slot**

**NOTICE**

- Risk of damage to SD card. Do not use sharp tools, metal objects, or excessive force when inserting or removing the SD card. Use your fingers to insert and remove the card.
- Risk of data loss and corrupted recordings. Do not remove the SD card while the product is running. Unmount the SD card from the product's webpage before removal.

This product supports microSD/microSDHC/microSDXC cards.

For SD card recommendations, see axis.com.

* microSD, microSDHC, and microSDXC Logos are trademarks of SD-3C LLC. microSD, microSDHC, microSDXC are trademarks or registered trademarks of SD-3C, LLC in the United States, other countries or both.

**Buttons**

**Control button**

The control button is used for:

- Resetting the product to factory default settings. See Reset to factory default settings on page 21.
- Connecting to an AXIS Video Hosting System service. To connect, press and hold the button for about 3 seconds until the status LED flashes green.
Function button

The function button is used for:

- **Leveling assistant** – This function helps to ensure the camera is level. Press the button for about 3 seconds to start the leveling assistant and press again to stop the leveling assistant. The buzzer signal assists leveling of the camera, see *Buzzer signal for leveling assistant on page 24*. The camera is level when the buzzer beeps continuously.

Connectors

Network connector

RJ45 Ethernet connector with Power over Ethernet (PoE).

IDC connector

Use the insulation-displacement connector (IDC) to connect a network cable without an RJ45-connector.

**Note**

When using the IDC connector, connect a patch cable between the patch cable connector on the foot and the network connector on the camera assembly.

![Diagram of IDC connectors](image)

1–8 IDC connectors
9 Patch cable connector

Pin assignment

<table>
<thead>
<tr>
<th>Position</th>
<th>T586A</th>
<th>T586B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blue and white</td>
<td>Blue and white</td>
</tr>
<tr>
<td>2</td>
<td>Blue</td>
<td>Blue</td>
</tr>
<tr>
<td>3</td>
<td>Orange and white</td>
<td>Green and white</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>Green</td>
</tr>
<tr>
<td>5</td>
<td>Green and white</td>
<td>Orange and white</td>
</tr>
<tr>
<td>6</td>
<td>Green</td>
<td>Orange</td>
</tr>
</tbody>
</table>
AXIS Q17 Series

Specifications

<table>
<thead>
<tr>
<th></th>
<th>Brown and white</th>
<th>Brown and white</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Brown</td>
<td>Brown</td>
</tr>
</tbody>
</table>

**Audio connector**

- Audio in – 3.5 mm input for a mono microphone, or a line-in mono signal (left channel is used from a stereo signal).

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tip</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ring</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sleeve</td>
<td></td>
</tr>
</tbody>
</table>

Audio Input

Microphone/Line in
Microphone bias voltage
Ground

For audio in, the left channel is used from a stereo signal.

**I/O connector**

Use the I/O connector with external devices in combination with, for example, motion detection, event triggering, and alarm notifications. In addition to the 0 V DC reference point and power (DC output), the I/O connector provides the interface to:

**Digital input** – For connecting devices that can toggle between an open and closed circuit, for example PIR sensors, door/window contacts, and glass break detectors.

**Digital output** – For connecting external devices such as relays and LEDs. Connected devices can be activated by the VAPIX® Application Programming Interface or from the product’s webpage.

4-pin terminal block

**Example**

1. DC ground
2. DC output 12 V, max 50mA
3. I/O configured as input
4. I/O configured as output
AXIS Q17 Series

Specifications

Power connector

2-pin terminal block for DC power input. Use a Safety Extra Low Voltage (SELV) compliant limited power source (LPS) with either a rated output power limited to ≤100 W or a rated output current limited to ≤5 A.