



Video Recording

OPERATION GUIDE

for

Axis M4317 Camera Kit

About This Manual

This manual covers the installation procedures for the video recording using SoniClear software and systems, including the following products:

- Axis M4317 Video Camera Kit
- SoniClear Gov Video Recorder 10
- SoniClear Court Video Recorder 10
- SoniClear Interview Video Recorder 10

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SoniClear Video Recording

Overview

SoniClear video recording products are designed to make it easy to capture digital video along with digital audio. The software works with compatible Axis video cameras and RTSP encoders, and keeps the audio and video synchronized during playback. The user can select audio from any microphone or the microphone in the camera while viewing synchronized video of the event. The current release supports a single camera or encoder that is connected via Ethernet.

SoniClear M4317 Video Kit

SoniClear M4317 Video Camera Kit is available for use with Gov Video Recorder, Court Video Recorder, and Interview Video Recorder.

Axis M4317 Video Camera Kit

The Axis M4317 Video Camera Kit includes the following hardware:

- Axis M4317-PLVE video camera
<https://www.axis.com/products/axis-m4317-plve>
- Axis T6101 Mk II Audio Adapter Module
<https://www.axis.com/products/axis-t6101-mk-ii-audio-and-io-interface>
- Axis T8120 POE Power Injector
<http://www.axis.com/us/en/products/midspans/axis-t8120-midspan-15-w-1-port>

Installation Process

The Video Recording Kit with the Axis M4317 Camera is supplied preconfigured and ready to install. Customer is responsible for installing the camera, microphone system, wiring, and SoniClear software.

Installation assistance is provided by SoniClear via phone, email, and remote computer connection, as needed.

Recommended Microphone Equipment

Various SoniClear microphones will work with video, including multichannel recording interfaces, such as the SoniClear Voice Tracker 3 microphone kit and SoniClear Digikit USB audio interface. Consult with SoniClear for recommended audio additions to the video kit:

<https://www.soniclear.com/products/#microphones>

Setting Up the SoniClear System

Hardware Requirements

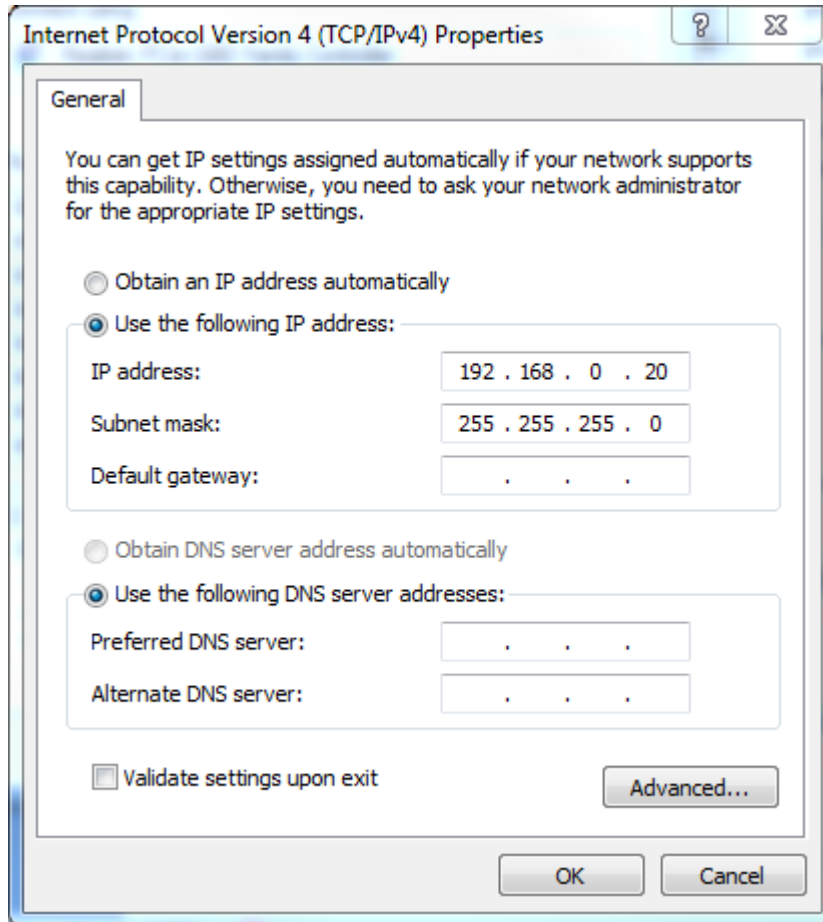
The SoniClear video recording requires a computer that has the following minimum hardware specifications:

- Intel-based desktop or laptop computer with i5 or i7 processor.
- Windows 10 or Windows 11 Operating System (64-bit).
- SoniClear-compatible microphones that support an audio feed to the camera.

Network Address Configuration

When connecting the camera to the laptop, the laptop will need to be configured to connect with a static IP address (no DHCP server used to assign the computer address). This is accomplished by setting the IP address for the computer in the network settings:

1. Open the Network and Sharing Center (Click Start button, enter “network”, and select “Network and Sharing Center” control panel search result).
2. Click Change Adapter Settings link in left column.
3. Double click on Ethernet adapter entry to open the Connection Status dialog for that adapter.
4. Click the Properties button.
5. Double click on the Internet Protocol Version 4 entry to edit the connection settings.
6. Select the option “Use the following IP address”.
7. Set the IP address to 192.168.0.20 (or similar address on the same “subnet”).
8. Uncheck the option “Validate settings upon exit”.



9. Make sure the Subnet mask is set to 255.255.255.0 and click OK.
10. Make sure the “Default gateway” field is blank if the camera is directly connected to the computer (since there is no gateway used in this type of connection).
11. Make sure the DNS fields are also blank if this is a direct connection to the camera.
12. Click OK to close the Local Area Connection Properties dialog. This may display a diagnostic error dialog because this setting does not support connection to the Internet. Dismiss these dialogs.
13. Disconnect any Ethernet cable if it is not connected to the Axis camera.
14. Reboot the computer.
15. The computer will reset the Ethernet port to the new static address set in the when you connect to the camera.
16. To confirm the port setting, make sure the camera is connected, and wait for the alternate IP address to be set (done when the little circle on the Ethernet

connection turns to a warning triangle). Then click Start and enter cmd.exe into the search field. Run the cmd.exe program displayed, which will bring up a command line dialog.

17. On the command line enter the command: ipconfig. This will display the current computer IP address.
18. If the displayed IP address is not the one specified, enter the following additional commands:

```
ipconfig /release  
ipconfig /renew  
ipconfig
```

The release and renew steps should force the IP address to the new setting, which will be confirmed by the last ipconfig command.

19. If the IP address does not set correctly, contact SoniClear Support for assistance.

IMPORTANT NOTE: after making these setting changes, the Ethernet port can only be used for connection to the camera. Use the Wi-Fi connection or second Ethernet port for Internet access, if that is required.

Network Device Power Settings

By default, the Ethernet network hardware in the computer will have power settings enabled. This will interfere with recording of video information sent through the Ethernet connection. The power saving settings must be disabled following these steps:

1. Open the Device Manager control panel (Click Start, type “device manager”, and select the Device Manager control panel search result).
2. Open the Network Adapters section of the device list.
3. Double click on the Ethernet network device. (If there is more than one Ethernet device, configure the device that will be connected to the Axis camera).
4. In the device properties dialog select the Power Management tab.
5. The options displayed for power management will vary, depending on the type of network device. The generic option is “Allow the computer to turn off this device to save power”. This should be unchecked. For Intel network devices the dialog will display is a set of options under the section “Power Saver Options”. Uncheck all these options to fully disable power saving.
6. Click OK.
7. Close all programs and reboot the computer.

Disable Wi-Fi

To ensure proper access to the camera via the Ethernet port, it may be necessary in some cases to disable the Wi-Fi transmitter while using the computer with the Axis camera. This is because some systems will try to connect to the camera via Wi-Fi and fail to connect to the Ethernet port. The most reliable way to turn off Wi-Fi is to disable the Wi-Fi driver in the Device control panel. Alternatively, it is possible on many laptop computers to manually disable the Wi-Fi from a button. However, this requires that the system user be properly training on this detail and that they exercise care to make sure the Wi-Fi is turned off before starting SoniClear.

NOD32 Antivirus Setup

SoniClear has been tested for compatibility with the Eset NOD32 antivirus product. SoniClear video recording has not been tested with any other antivirus product and only NOD32 is recommended and supported.

By default, the NOD32 antivirus scanning product tries to monitor the recording files being written by SoniClear. With audio this generally does not interfere. However, with the high data volume produced by video recording the antivirus product can introduce processor overhead and disk drive delays that will cause problems.

To prevent this type of interference, add exclusions in the antivirus software setup for the following file types:

- *.video
- *.index
- *.state
- *.mp3
- *.wav
- *.bkc
- *.bkm
- *.txt

Adjust the settings for NOD32 Real Time Scan following these steps:

1. Open the Eset NOD32 control panel: Click the Start button, click All Programs, scroll down and click Eset folder and the Eset NOD32 folder, then click the Eset NOD32 program icon.
2. In the NOD32 window click the Setup link in the left panel.
3. Click the link “Enter advanced setup...” in the right panel.
4. Double click on the Computer link to open that section.
5. Double click on the “Antivirus and antispysware” link to open that sub-section.
6. Click on the Exclusions link to open the Exclusion editing panel.
7. Click the Add button and enter an exclusion item listed above (such as *.video).
8. Repeat the Add operation to add all the file exclusions.
9. Click OK to close the setup window.
10. Click the link “Enter advanced setup...” in the right panel.
11. Double click on the Computer link to open that section.

12. Double click on the “Antivirus and antispyware” link to open that sub-section.
13. Click on the Real-time file system protection link to open those options.
14. Click on the Setup button for ThreatSense engine parameter setup.
15. Click on Extensions option.
16. Enter an exclusion item listed above, without the “*.” characters (such as VIDEO)
17. Click the Add button.
18. Repeat the Add operation to add all the file exclusions.
19. Click OK twice to close the editing dialogs and close the main NOD32 window.

Adjust the NOD32 web scanning feature to prevent the camera video from being scanned while recording:

1. Open Eset control panel (click on NOD32 icon in System Tray icon).
2. Click on Setup button on left.
3. Click on "Enter advanced setup" link.
4. Expand "Web and Email" settings tree.
5. Expand "Web access protection" settings tree.
6. Click on "URL address management" link.
7. Click the Add button and enter the IP address of the camera (such as 192.168.0.90).
8. Click OK to save the new IP address exclusion. Click Yes to accept security warning, if you get one.

Configure Windows Firewall

After the SoniClear software has been installed the Windows Firewall must be modified to allow access from the SoniClear software to the Axis camera. Follow these steps:

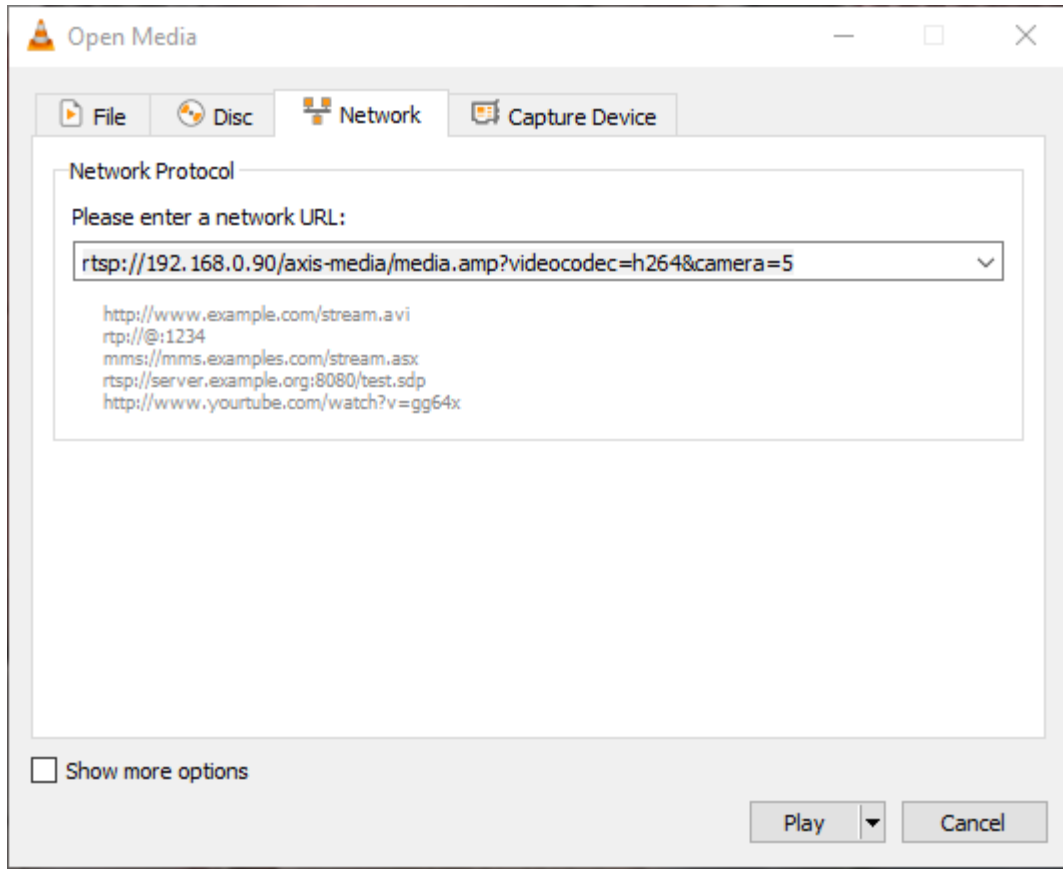
1. Click Start button and select Control Panel.
2. Ensure that “Small Icons” is set as the display type.
3. Click on Windows Firewall.
4. Click on link in left column, “Allow a program or feature through Windows Firewall”.
5. Click the Change Settings button.
6. Click the Allow Another Program button.
7. If SoniClear 9 is shown on the list of programs:
 - a. Select SoniClear 9 on the list.
 - b. Click the Add button.
8. If SoniClear 9 is not shown on the list, continue:
 - a. Click the Browse button.
 - b. Navigate to the folder were SoniClear was installed, select the SoniClear9.exe program, and click Open.
 - c. Click the Add button.
9. Ensure that both check boxes for SoniClear 9 allowing access on Home/Work and for Public networks are checked.
10. If using the Video Encoder option, these steps will need to be repeated to add the SoniClearVideoProxy.exe program located in the proxy\bin folder under the folder where SoniClear9.exe is located.
11. Click OK button.
12. Close Control Panel.

Troubleshooting Connection to the Video Device

If you have trouble connecting to a camera, here are a few tips on how to determine the solution:

1. Rule out IP address problems. Make sure the IP address of the device is on the same subnet as the computer. Other issues can include problems with the device being assigned to the same address as another device on the network, not being accessible because of network connection problems, being behind a hardware firewall, etc.
2. Use the command line ping command to ensure that the recording computer can access the video device address.
3. Try temporarily disabling the Windows firewall. If you disable it and the device still cannot connect, the problem is not the Windows firewall.
4. Some antivirus programs include a proprietary firewall that replaces or augments the Windows firewall. Sometimes disabling the antivirus product will allow a connection (indicating that a setting needs to be changed in the antivirus software). However, most antivirus programs include several scanning mechanisms, so it can be difficult to disable the product entirely. Consult the documentation for the product to determine the correct antivirus and/or firewall settings.
5. Connect to the video device using the browser. If you can connect with the browser and not SoniClear or VLC, most likely cause is a firewall or antivirus program blocking the packets based on the RTSP protocol port number or blocking the application from accepting a connection (see VLC technique below).
6. Use the freeware video software VLC to connect to the video device (see www.videolan.org). From the Media pulldown menu selection, use the Open Network Stream feature and enter the RTSP connection URL:

rtsp://192.168.0.90/axis-media/media.amp?videocodec=h264&camera=5



If VLC can connect and SoniClear cannot connect, the issue is not related to the network connectivity or the firewall.

Install Axis Camera Software

Software for the Axis camera must be installed on the recording computer. Run the Axis software installation program provided with the Video Recording Kit and following the instructions on screen:

InstallAxisCameraSoftware4_21_2.exe

Note: the version number of this installer will be updated from time to time, with the version number shown in the installer executable name.

You will need to install the Axis software on all workstations that will be playing video using SoniClear software. Run the provided Axis Camera Software Installer on each playback computer to install the H.264 and AAC decoders required for playing these types of recordings.

Install Video and Audio Decoder Licensing

The SoniClear video software and solution kits provide a license package that allows for installation of the H.264 and AAC decoders included in the Axis Camera Software Installer.

If you wish to install the Axis camera software on more systems than provided by SoniClear or the Axis cameras being installed, an additional 50-unit license pack (Axis part number 0160-060) must be purchased first. Contact SoniClear to purchase this license product. It can also be purchased from any Axis distributor, or as a drop-ship item from B&H:

www.bhphotovideo.com/c/product/600593-REG/

IMPORTANT LICENSING INFORMATION: A single license for the H.264 and AAC decoders is included with each camera or encoder device. Before running the Axis Camera Software Installer on more than one recording or playback computer you must have a license for the decoders that will be copied to each computer in this installation process. A copy of the license agreement is included with the decoder license package. Some applications, such as commercial recording and distribution of video content for profit, may require additional licensing arrangements with MPEGLA, the patent licensing organization for H.264 and AAC. More information is available on their website at: www.mpegla.com. See the section “Request A License”, and “AVC/H.264 License Agreement”.

Install SoniClear 10 Software

For Gov Video Recorder 10 or Interview Video Recorder 10, install the SoniClear software following the directions in the SoniClear Installation Guide. For Court Video Recorder 10 consult the Court Recorder Installation Guide:

www.soniclear.com/product-manuals

Configure SoniClear 10 Software Preferences for Axis Cameras

The SoniClear software preferences must be modified for video recording. This includes enabling video support, specifying how to connect to the video camera, and video options.

The steps for editing the SoniClear preferences are:

1. Select the Edit/Preferences/Recording Options dialog
2. Check the Enable Video option.
3. Select “One Camera”.
4. Check the “Include camera audio” option. This is the recommended setting.
5. Select the Custom option
6. Configure the address for connecting to the camera:

`axrtsphhttp://192.168.0.90/axis-media/media.amp?videocodec=h264&h264profile=baseline &camera=5`

This URL accesses the H.264 Baseline streaming profile (which is required for SoniClear recording). The “camera” parameter refers to the View Area being accessed from the camera. In this example, camera #5 corresponds to the View Area 1.

Note: H.264 and AAC encoders require licensing for recording and playback. See the section “*Install Axis Video and Audio Software*” above for details.

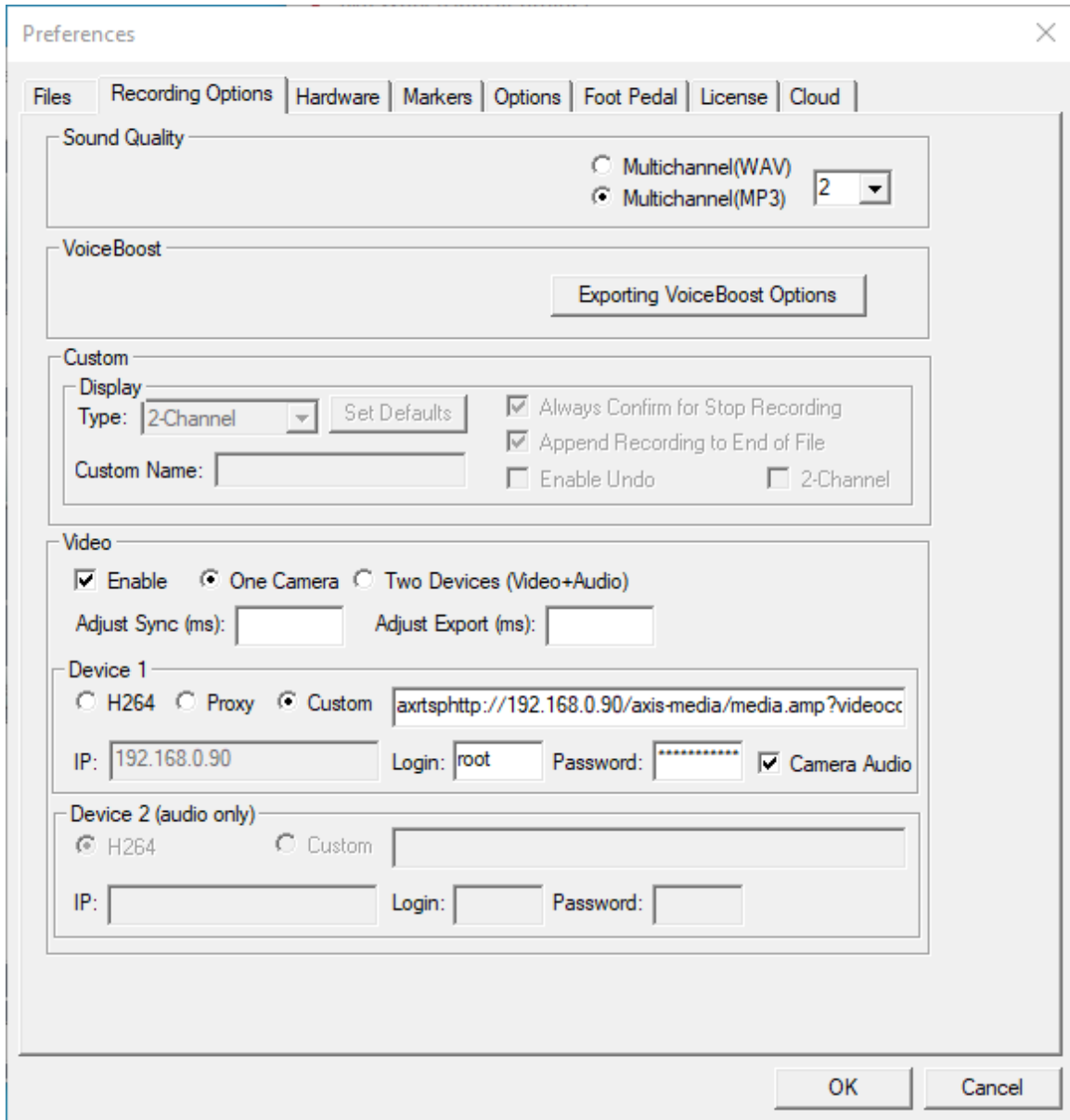
7. For the User field enter:
root
(or other valid user account on the Axis camera).
8. Enter in the Password field:
Use password assigned to the camera during setup (see default password shown in

the copy of this manual included with the kit).

9. Set the Adjust Sync field to:
0 (the number zero or blank)
Note: this may need to be adjusted based on characteristics of the sound card in this computer.

10. Set the Adjust Export field to:
0 (the number zero, or blank)
Note: this may need to be adjusted based on characteristics of the camera device to provide accurate audio/video sync when exporting the recording to MP4 or WVM format.

After setting this information in the preferences, exit and restart the program. The Video Preview window should be displayed on the screen. If not, contact SoniClear Support for assistance.



Transcriber Live Configuration

Transcriber Live supports video monitor and video playback functionality. This feature must be configured in Edit/Preferences/Recording Options by checking the Enable option in the Video section.

SoniClear Player Configuration

SoniClear Player (in Export CD Image and Manage LAN Archive) supports video monitor and video playback functionality. This feature is enabled by default. To disable

video, uncheck the Enable check box in the Video section of the Edit/Preferences/Recording Options dialog.

Configure Camera Audio Playback

When playing back camera audio in Court Recorder 9 or Gov Recorder 9, the sound will be played through the current default Windows audio output device. This can be set in the Windows Sound control panel. The audio device selection can be the same output device that SoniClear uses for playback (headphones or speaker), or a different device.

Custom Axis M4317 Camera Configuration

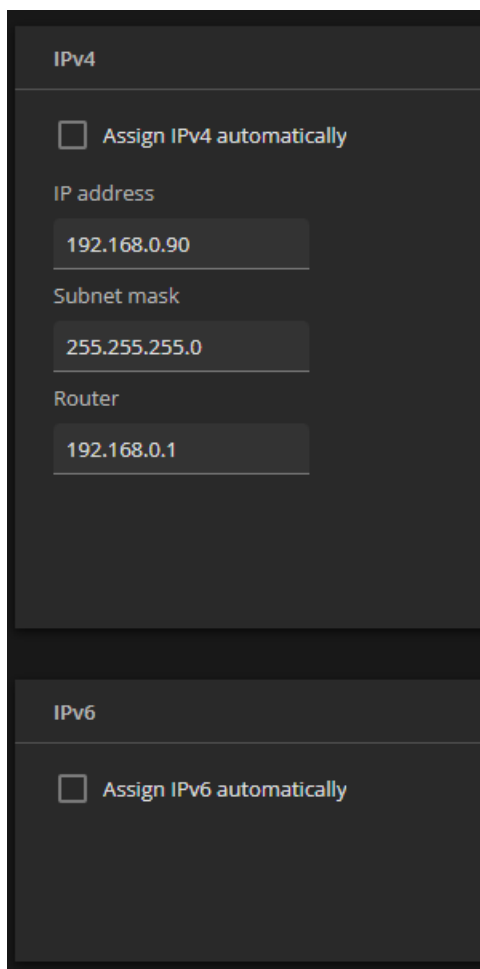
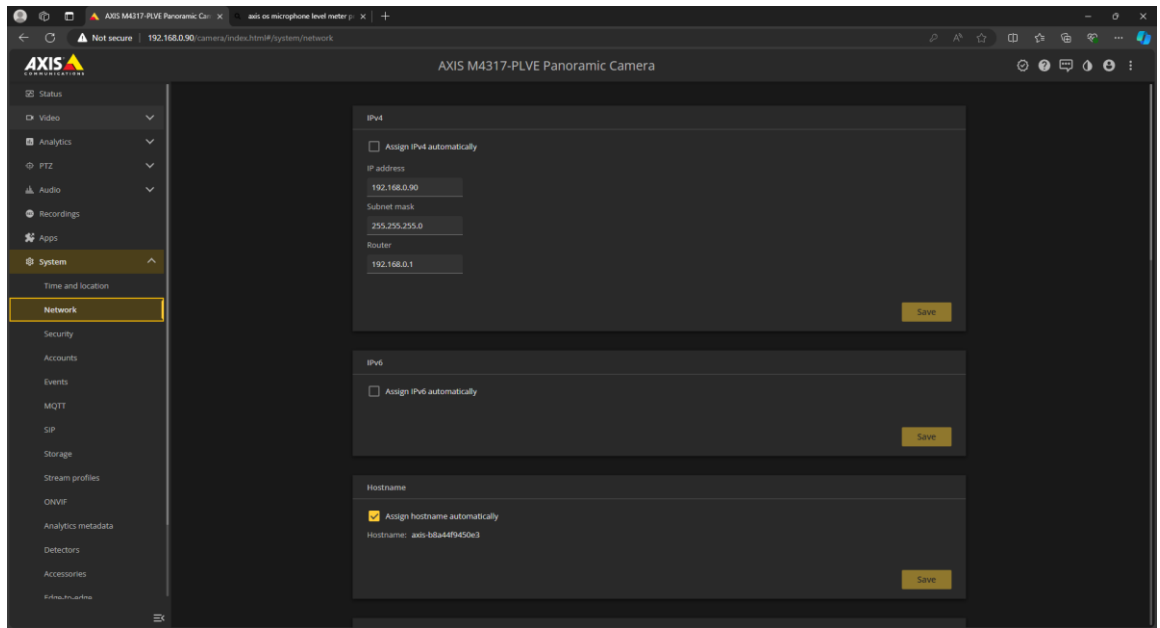
The M4317 camera supplied in the kit has been pre-configured to work out-of-the-box with SoniClear. If you are using a camera that has not been configured, the stock settings for this camera are not compatible with SoniClear. The settings described are an overview of the adjustments needed. Contact SoniClear Support for additional instructions when installing this kit.

Once the camera and SoniClear software have been installed and the computer has been configured for video, you will need to further customize the camera settings using these additional steps:

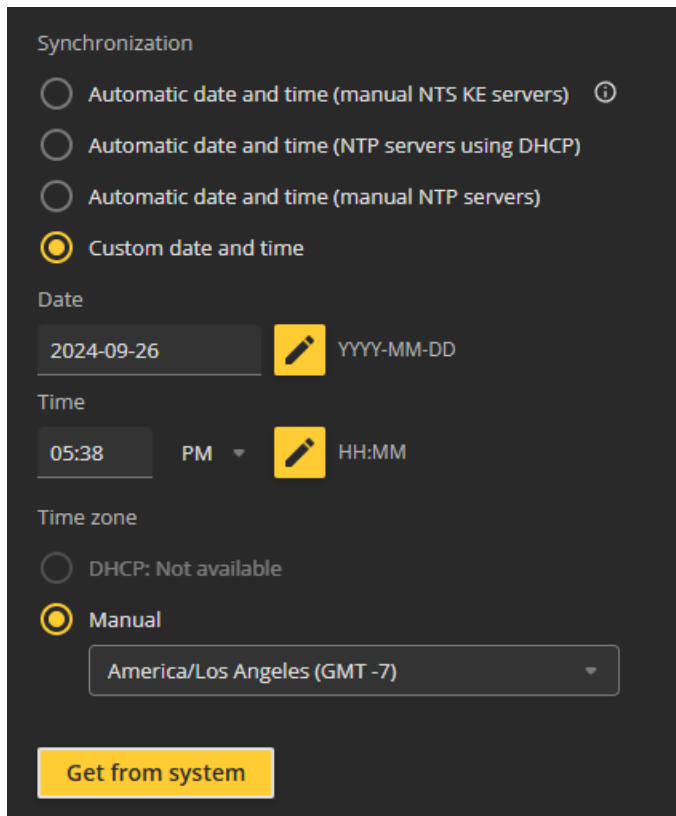
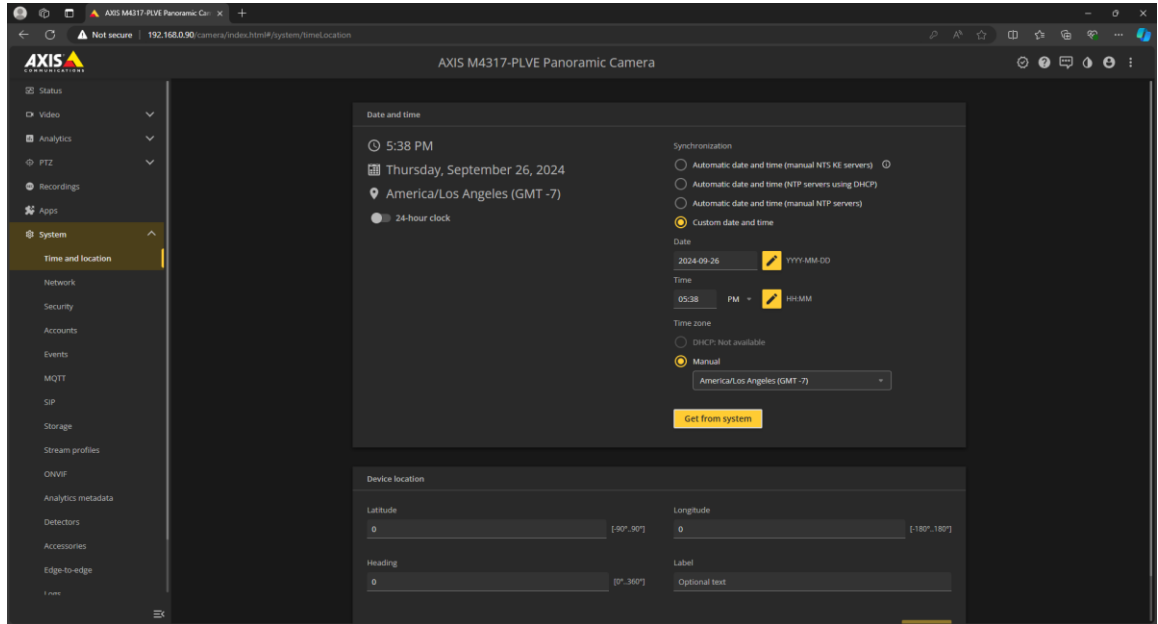
1. If you connect to the Axis M4317 camera through an Ethernet port that has been configured for port 192.168.0.20 (or equivalent), and there is no DHCP server connected accessible from that port, the default address for the camera will be 192.168.0.90. This is also the address that the camera is configured for when it is shipped in the original camera kit.

If you are connecting to a new camera for the first time through an Ethernet port that is connected to a DHCP server, the camera will automatically select an address from DHCP. That will require determining the IP address of the camera. In this case, locate the camera address using the Axis IP Utility program that can detect the camera address (available for free download from the Axis website).

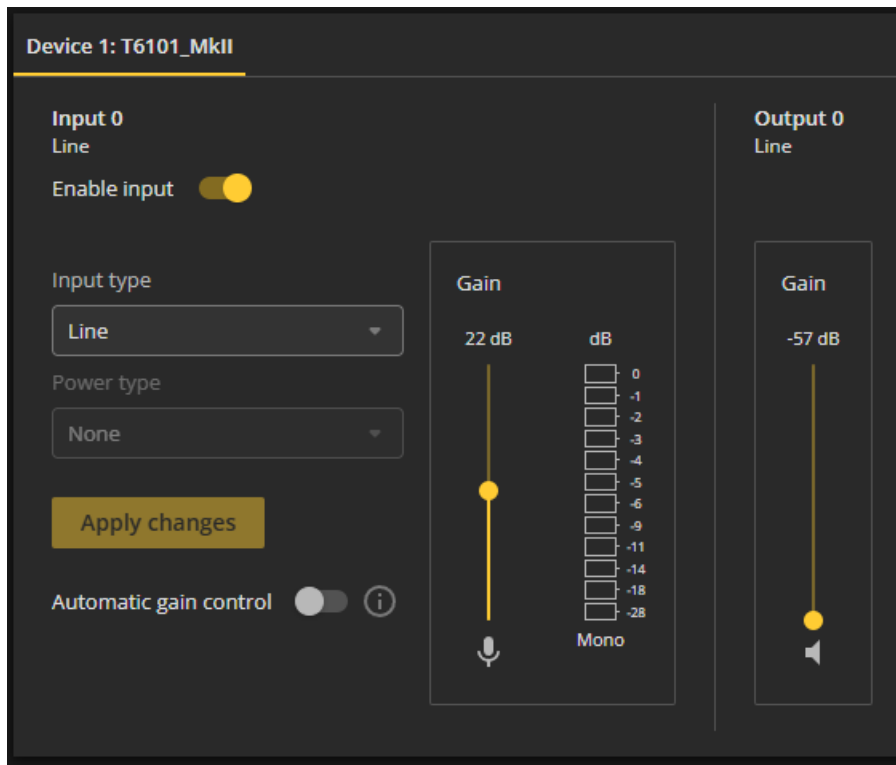
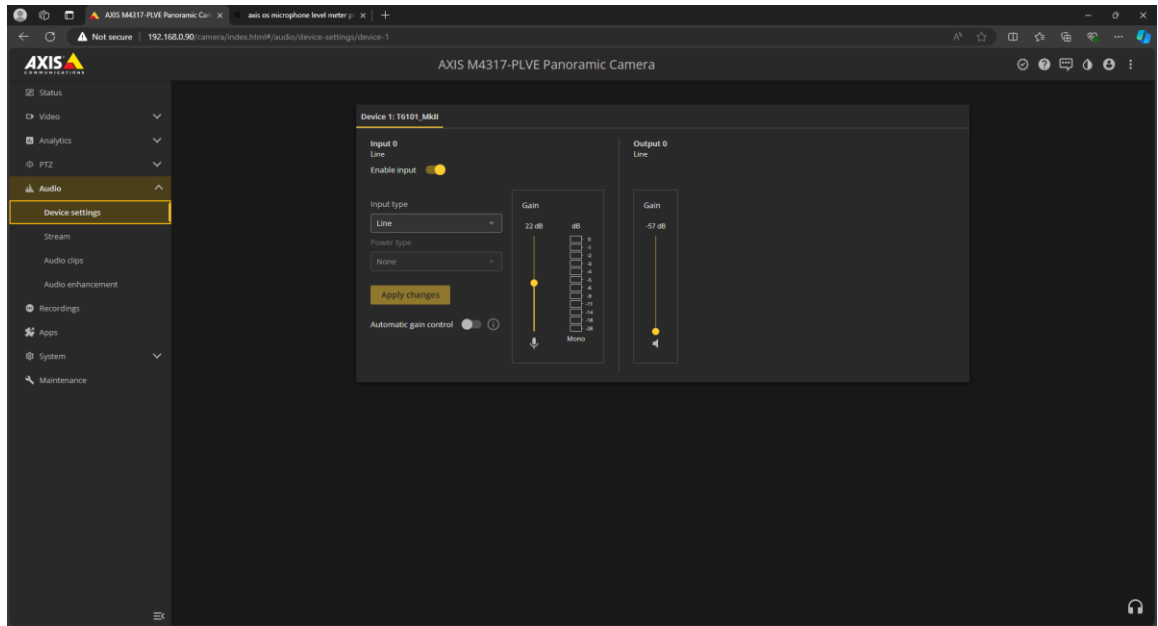
2. Using a browser connect to the default M4317 IP address at this URL: <http://192.168.0.90>, or to the DHCP address determined in Step 1.
3. Log into the Axis control panel using the authentication password provided at the end of this manual, or in the Custom Installation Instructions provided with the kit. If you are connecting a new camera for the first time, you will need to configure the username and password.
4. If the network address has not been set to a fixed IP address yet, select the System/Network tab on the left and configure the fixed IP address:



5. The Time and Date will need to be set, either using an NTP server (if accessible from this network connection), or manually:



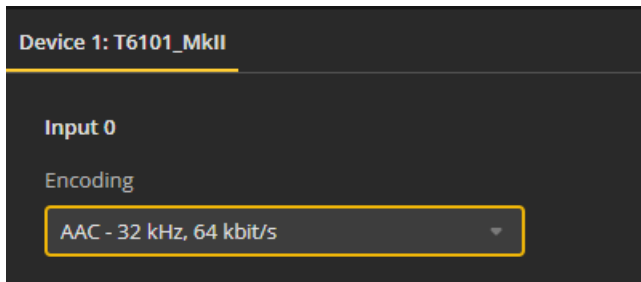
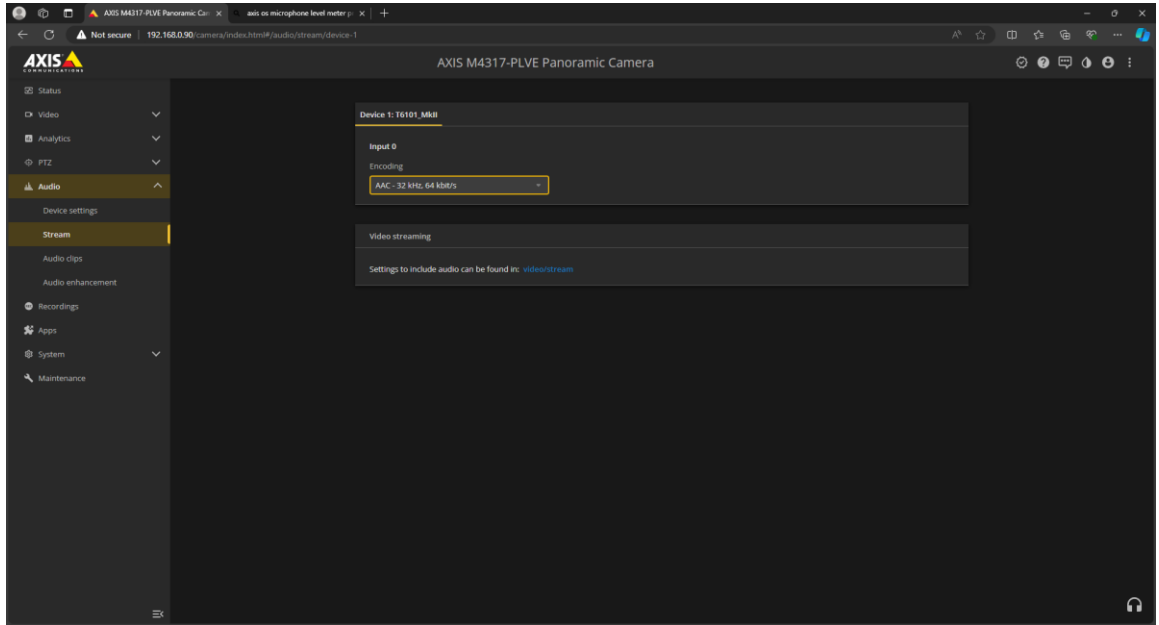
- Adjust the audio features first, before adjusting the video options, using the Audio/Device settings tab:



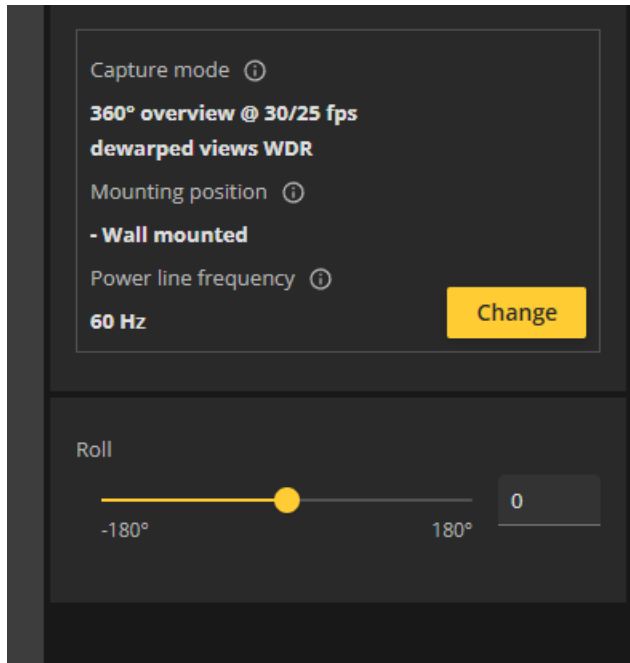
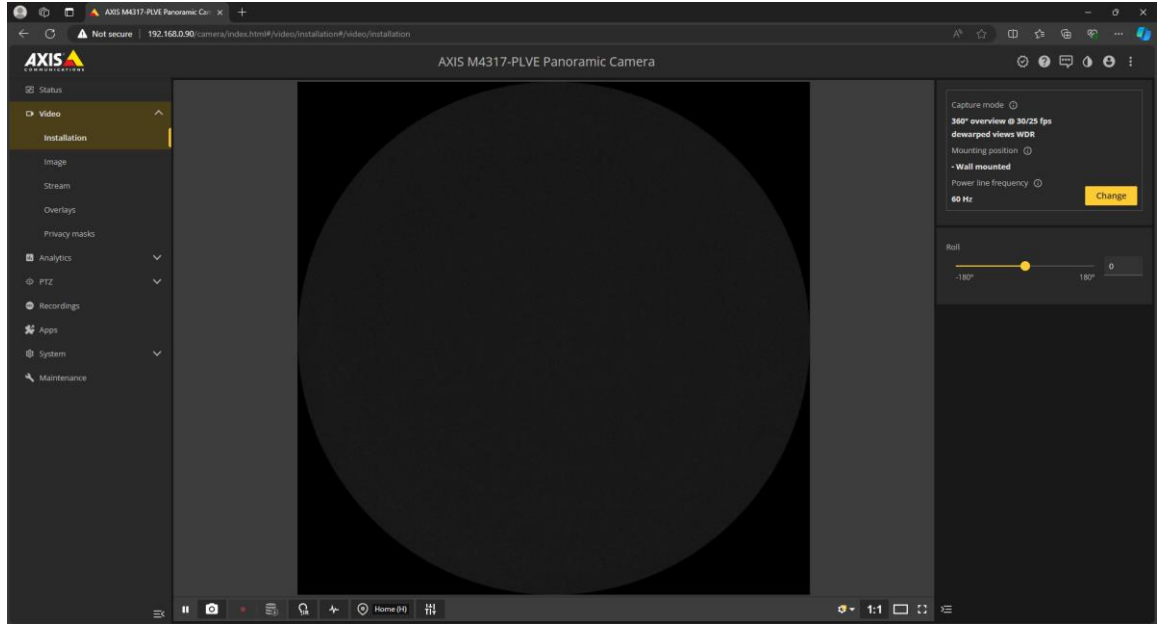
The audio input must be enabled. The input type should be set to Line level when connected to a mixer (such as the HA6 or Digikit mixers from SoniClear). When connected to a microphone level signal (such as the Voice Tracker 3) set the input type to Microphone. The level meter may or may not show the signal being

received by the camera. The Gain must be set by trial and error to a level that provides an equal playback loudness in comparison to the signal that has been recorded in SoniClear to the Stereo MP3 file.

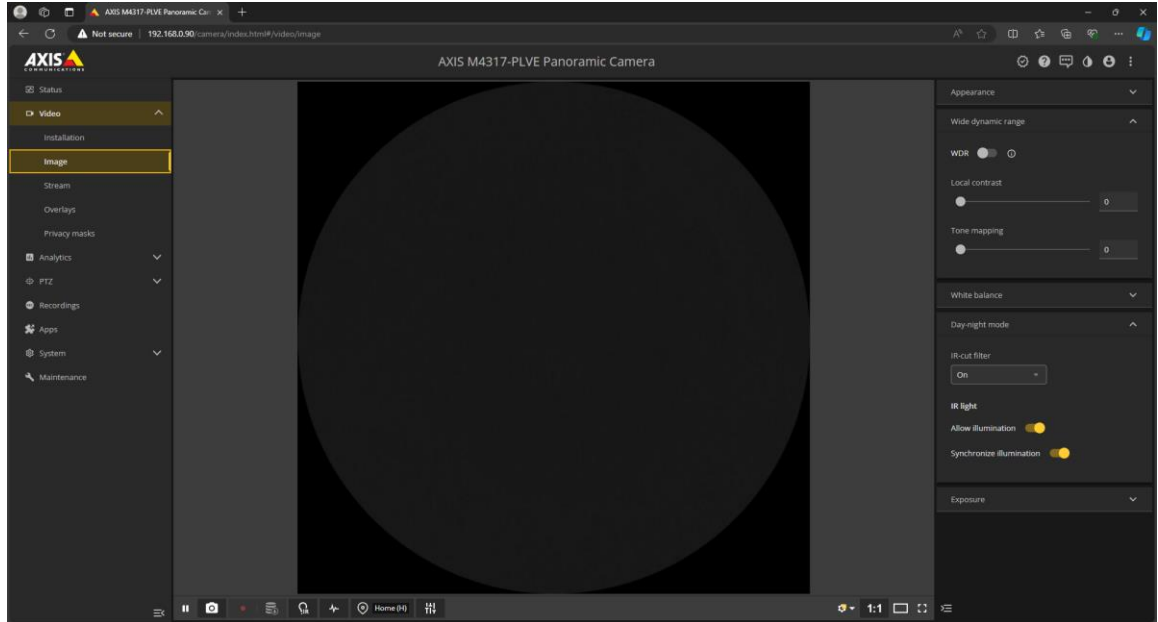
7. In the Audio/Streaming tab set the quality of audio encoding for streaming to SoniClear:



8. On the Video/Installation tab, configure the camera to use “360 degree overview @ 30/25 fps dewarped views WDF”. This also requires selecting whether the camera will be mounted on the wall (the default for the camera kit), on the ceiling, or on a desk:



9. In the Video/Image tab adjust the settings for the image quality required:



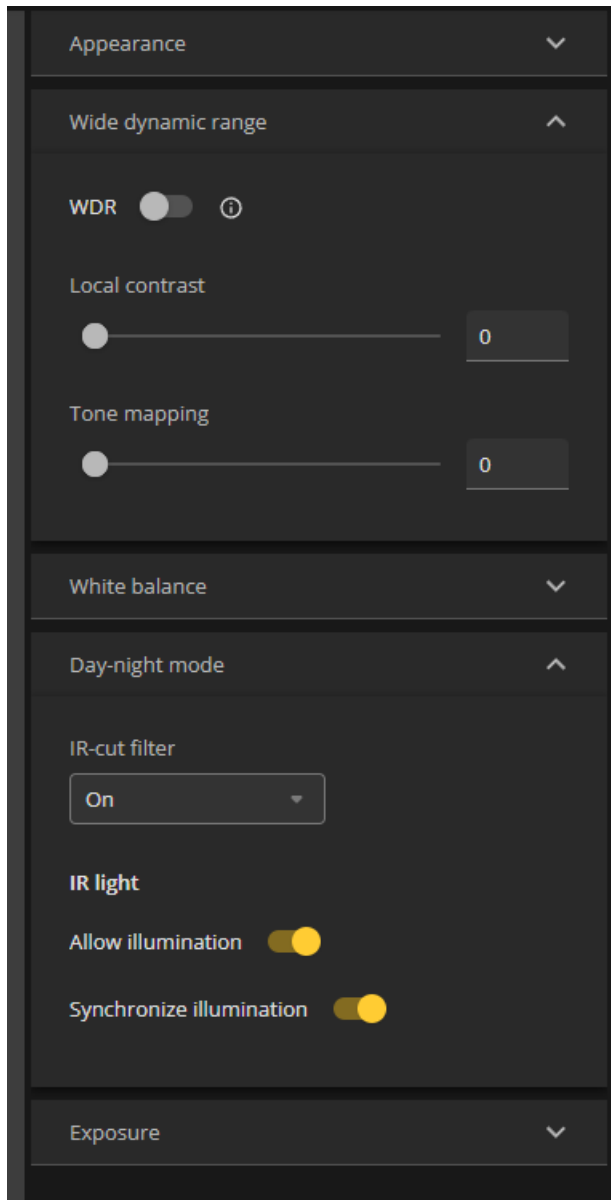
In the Appearance section, adjust the sliders for the lighting conditions of the room.

Turn off the Wide Dynamic Range (WDR) option and minimize the Local contrast and Tone mapping settings.

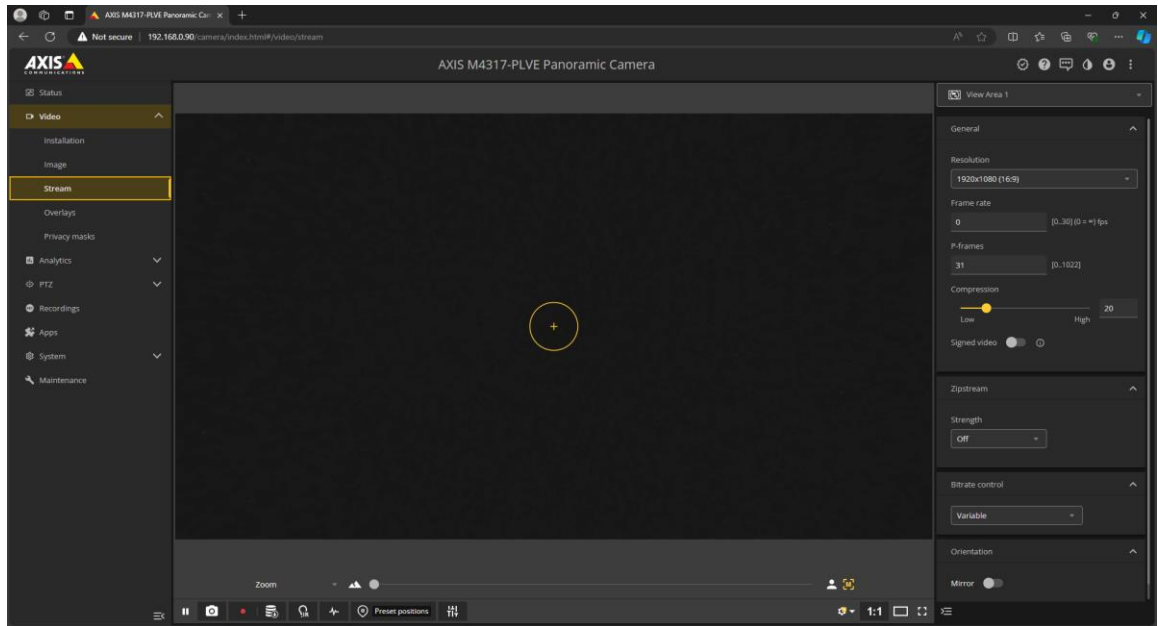
White balance can be left at Automatic, or follow the instructions from Axis for manually setting the white balance.

Turn off the nighttime lighting feature.

Set the Exposure section to match the lighting in the room, if necessary.



10. In the Video/Stream tab, adjust the streaming parameters to be compatible with SoniClear:



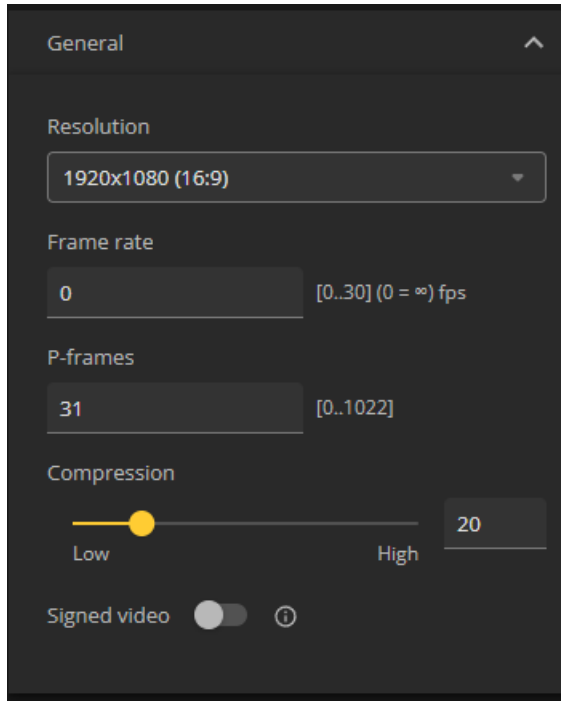
The camera provides multiple streams, such as the View Area 1 stream:



Before adjusting the settings, be sure to select the View that will be used by SoniClear to record from the camera.

Each of these views receives its own settings in the Stream section and SoniClear and other software can access these different views independently. This includes settings to determine the final image by dewarping the data from the camera, and how the resulting image is streamed to the software

Note that some of the view options will only be available depending on the mounting location. For example, the Double Panorama view requires ceiling or desk mounting.

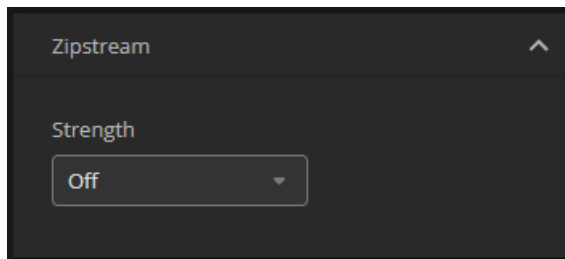


In the General section, resolution can be set to any desired value up to 1080p (1920x1080). Maximum frame rate that SoniClear can accept is 30fps, which is the maximum frame rate available on this camera (so this value can also be set to zero).

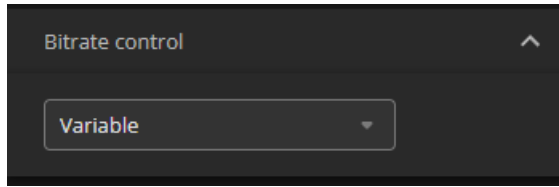
SoniClear expects P-frames to be set to 31.

Compression can be set to any value. Lower numbers will create more detailed image quality, but higher bitrates. Adjust to find a suitable compromise between image quality and recording size.

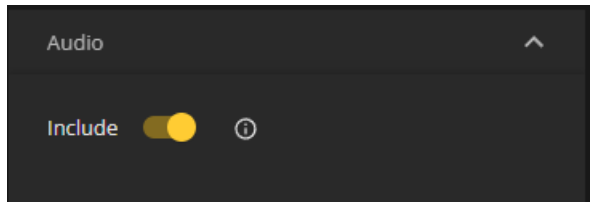
Signed video should be disabled.



The Zipstream feature allows for reducing the video recording size with minimal reduction in image quality. Select the option that provides the desired level of image quality.



Bitrate control is always set to Variable.



The Include Audio feature must always be enabled.

11. The area of the image to be streamed for each View is controlled using the digital Pan/Tilt/Zoom feature of the camera. To adjust the selection of the image to stream, click the Play button in the middle image display section of the control panel.
12. Adjust the Pan/Tilt feature of the camera to position the image by double clicking on the center of the area to be covered.
13. Adjust the Zoom slider under the video image to control zoom level of the shot.
14. Click on the “Default Setting” button under the video image and select Setup option.
15. Click Create preset position and select this new preset as the Home location.

