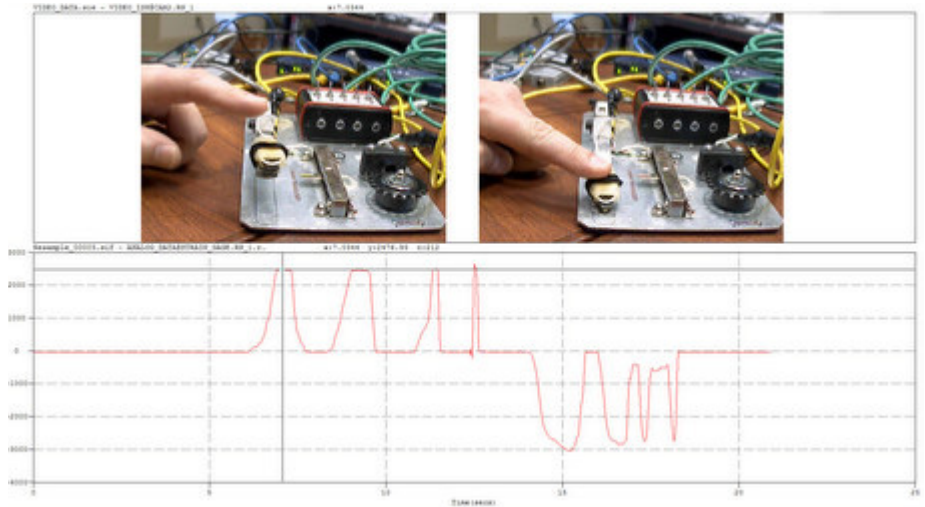


Quick Start Guide

English



Network Camera Devices **SoMat eDAQ/eDAQ *lite***

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Safety Information

Safety Rules

The supply connection, as well as the signal and sense leads, must be installed in such a way that electromagnetic interference does not adversely affect device functionality.

Automation equipment and devices must be covered over in such a way that adequate protection or locking against unintentional actuation is provided (such as access checks, password protection, etc.).

When devices are working in a network, these networks must be designed in such a way that malfunctions in individual nodes can be detected and shut down.

Safety precautions must be taken both in terms of hardware and software, so that a line break or other interruptions to signal transmission, such as via the bus interfaces, do not cause undefined states or loss of data in the automation device.

Before connecting the device, make sure that the mains voltage and current type specified on the type plate correspond to the mains voltage and current type at the site of installation and that the current circuit used is sufficiently safe.

The maximum permissible supply voltage for Axis network camera devices is 20 V DC.

Appropriate use

The Axis network camera devices and their connected transducers may be used for measurement tasks only and directly related control tasks. To ensure safe operation, the transducer may only be used as specified in the operating manual. It is also essential to follow the respective legal and safety regulations for the application concerned during use. The same applies to the use of accessories.

Each time, before starting up the equipment, you must first run a project planning and risk analysis that takes into account all the safety aspects of automation technology. This particularly concerns personal and machine protection.

Additional safety precautions must be taken in plants where malfunctions could cause major damage, loss of data or even personal injury. In the event of a fault, these precautions establish safe operating conditions.

This can be done, for example, by mechanical interlocking, error signaling, limit value switches, etc.

General dangers of failing to follow the safety instructions

The Axis network camera devices comply with the state of the art and are safe to operate. Inappropriate use and operation by untrained personnel can give rise to remaining dangers.

Anyone responsible for installing, starting up, maintaining or repairing the equipment needs to have read and understood the operating manual and in particular the safety instructions.

Maintenance and cleaning

The Axis network camera devices are maintenance free. Please note the following when cleaning the housing:

- Before cleaning, disconnect the equipment from the power supply.
- Clean the housing with a soft, slightly damp (not wet!) cloth. Never use solvents, since these could damage the labelling on the front panel and the display.
- When cleaning, ensure that no liquid gets into the equipment or connections.

Remaining dangers

The scope of supply and performance of the data acquisition system covers only a small area of measurement technology. In addition, equipment planners, installers and operators should plan, implement and respond to the safety engineering considerations of measurement technology in such a way as to minimize remaining dangers. Prevailing regulations must be complied with at all times. There must be reference to the remaining dangers connected with measurement technology. After making settings and carrying out activities that are password-protected, you must make sure that any controls that may be connected remain in safe condition until the switching performance of the amplifier system has been tested.

In this manual, the following symbols are used to point out remaining dangers:



DANGER

Meaning: Maximum danger level

Warns of an imminently dangerous situation in which failure to comply with safety requirements will result in death or serious bodily injury.



WARNING

Meaning: Dangerous situation

Warns of a potentially dangerous situation in which failure to comply with safety requirements can result in death or serious bodily injury.



CAUTION

Meaning: Potentially dangerous situation

Warns of a potentially dangerous situation in which failure to comply with safety requirements could result in death or serious bodily injury.



Meaning: Electrostatic sensitive devices

Devices marked with this symbol can be destroyed by electrostatic discharge. Please observe the precautions for handling electrostatic sensitive devices.

Symbols pointing out notes on use and waste disposal as well as useful information:



NOTE

Points out that important information about the product or its handling is being given.



Meaning: CE mark

The CE mark enables the manufacture to guarantee that the product complies with the requirements of the relevant CE directives (the declaration of conformity is available at <http://www.hbm.com/HBMdoc>).



Meaning: Statutory marking requirements for waste disposal

National and local regulations regarding the protection of the environment and recycling of raw materials require old equipment to be separated from regular domestic waste for disposal.

For more detailed information on disposal, please contact local authorities or the dealer from whom you purchased the product.

Working safely

Error messages may only be acknowledged if the cause for the error has been removed and no further danger exists.

Conversions and modifications

HBM's express consent is required for modifications affecting the Axis 211 Network Camera design and safety. HBM does not take responsibility for damage resulting from unauthorized modifications.

In particular, any repair or soldering work on motherboards is prohibited. When exchanging complete assemblies, it is essential to use original HBM parts only. The product is delivered from the factory with a fixed hardware and software configuration. Changes can only be made within the possibilities documented in the manuals.

Qualified personnel

The equipment may be used by qualified personnel only; the specifications and the special safety regulations need to be followed in all cases.

This means people who meet at least one of the three following requirements:

- Knowledge of the safety concepts of automation technology is a requirement and as project personnel, you must be familiar with these concepts.
- As automation plant operating personnel, you have been instructed how to handle the machinery and are familiar with the operation of the equipment and technologies described in this documentation.
- As commissioning engineers or service engineers, you have successfully completed the training to qualify you to repair the automation systems. You are also authorized to activate, to ground and label circuits and equipment in accordance with safety engineering standards.

It is also essential to comply with the appropriate legal and safety regulations for the application concerned during use. The same applies to the use of accessories.

The term "qualified personnel" refers to staff familiar with the installation, fitting, start-up and operation of the product, and trained according to their job.

1 Getting Started

1.1 Overview

This manual provides instructions on using the Axis network cameras with HBM's eDAQ or eDAQ*lite* data acquisition system. For more detailed information on using the eDAQ, eDAQ*lite* or TCE software, refer to the eDAQ or eDAQ*lite* User Manual. The TCE software supports the following devices:

Device	Compatible TCE Version
Axis 211 Network Camera	TCE 3.14 or later
Axis M7001 Video Encoder	TCE 3.15 or later
Axis P1311 Network Camera	TCE 3.15 or later
Axis P1344 HD Network Camera	TCE 3.15 or later
Korenix JetNet POE Switch with HBM POE PSU	TCE 3.15 or later



NOTE

HBM only supports the devices listed in the above table and assumes no risk if any other devices are used.

1.1.1 Equipment

To use an Axis network camera to record and view video, the following equipment is required:

- a networked eDAQ or eDAQ*lite* with firmware version 3.14 or later
- a power over ethernet (POE) switch (HBM recommends the Korenix JetNet)
- a support PC with a JavaScript-enabled web browser
- a TCP/IP network (DHCP recommended)
- Test Control Environment (TCE) (see previous section for compatible versions)
- InField version 2.4.0 or later

1.2 Step 1: Set Up the Network Camera

1.2.1 Reset the Camera to Factory Default

First, reset the camera to factory defaults:

1. Remove power from the camera.
2. Press and hold the control button and reapply power to the camera from the POE port on the switch.
3. After the amber status indicator turns amber, release the control button.
4. Wait for the status indicator to turn green, which indicates that the camera has been reset. This may take up to two minutes.



NOTE

The location of the control button and status indicator depends on the camera model. For information on specific models, refer to the Axis documentation.

1.2.2 Configure the Camera

Next, configure the camera using the web interface:

1. If not already, power on the camera and connect it to the network via a shielded Ethernet cable to the POE switch.
2. Open a JavaScript-enabled web browser and enter the IP address of the networked eDAQ to display the eDAQ web interface.
3. Click on the hardware tab and then Manage Network Cameras beneath the hardware table to navigate to the camera setup page.
4. Click the Find Cameras on Network button under Available Networked Cameras to add the networked camera. The new entry is named “Misconfigured Camera.”




5. Verify that the serial number for the new entry matches the serial number on the shell of the camera.
 - If the serial number does not match, follow the troubleshooting steps in [“Troubleshooting During Configuration” on page 15.](#)
6. Click on the Correct camera configuration link under the camera entry to open the camera configuration page. Follow the on-screen instructions to assign the camera an IP address.
7. Wait during the configuring camera screen for the message that the Network is properly configured. Select Return to Manage Network Cameras Page button to return to the manage network cameras page.
 - If the configuration fails, try power cycling any switches or routers on the network.
 - If problems persist, refer to the troubleshooting steps in [“Troubleshooting During Configuration” on page 15.](#)
8. Click the Select this camera link under the camera entry to add the camera to the Selected Network Cameras list.
 - If there is no camera under Available Networked Cameras click the Find Cameras on Network button.



9. Click the Update eDAQ hardware list button to reset the eDAQ and add the camera to the eDAQ hardware table on the main hardware page.

Selected Networked Cameras

Camera IP	Connector	Serial #	Code	Operations
172.26.144.82	Camera_1	00408C9B13B6	v4.40.2	 AXIS 211 Deselect



NOTE

Once configured, a camera may be used by any networked eDAQ or eDAQ *lite* simply by following steps 8 and 9 for each system. However, the camera cannot provide the maximum frame rate to more than one eDAQ system at a time. For example, two eDAQs using the same camera and configured to request 30 frames per second only receive a maximum of 15 frames per second each.



NOTE

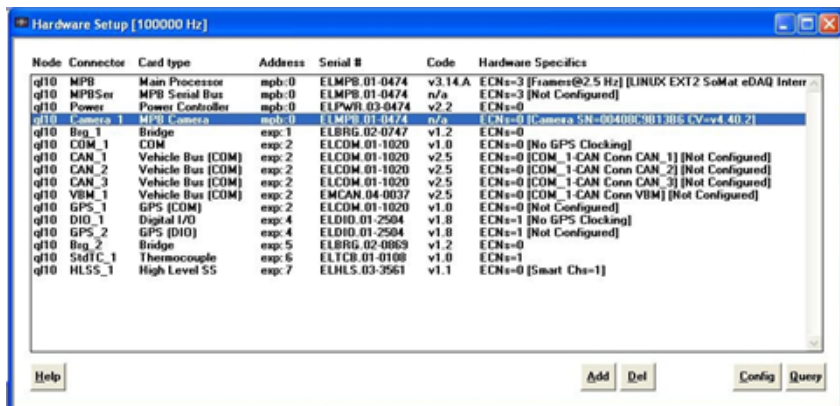
The camera image may be upside down by default. To rotate the image, refer to the Axis documentation

1.3 Step 2: Configure and Run a Test

1.3.1 Add a Camera Message Channel

To record camera data, configure a TCE test with a camera message channel.

1. Start TCE (3.14 or later) and either open an existing test or create a new test. Make sure to select SIE as the data option in the network setup window.
2. Perform a hardware query from the hardware setup window to list the eDAQ hardware including an entry for the network camera listed as “MPB Camera.”
 - If there is no camera entry, the camera is not configured correctly.



3. From the transducer and message channel setup window, click Add and select Message (Camera) to bring up the channel configuration options.
4. Enter an appropriate channel ID and description.
5. Click Message Channel Specifics... to show more configuration options.

6. Select a size, compression and frame rate.
 - The defaults are 640x480 pixels, 60% and 30 Hz.
 - For more details on these settings, refer to the eDAQ or eDAQlite User Manual.
7. Select OK to add the configured channel to the test.
8. In the DataMode window, click Add and select the Message Logger option.
9. Enter an appropriate DataMode ID and select the camera message channel by its channel ID as assigned in step 4 as the input channel.



NOTE

As of TCE 3.15, the Message Logger DataMode supports multiple input channels and triggering options.

10. To be able to view camera data later in InField, it is necessary to create a channel with time information and add it to a Time History DataMode.
 - Make sure that the Time History sample rate is higher than the camera frame rate. For the maximum frame rate of 30 Hz, the Time History sample rate must be at least 100 Hz and is recommended to be 500 Hz or higher.
11. Save and run the test.

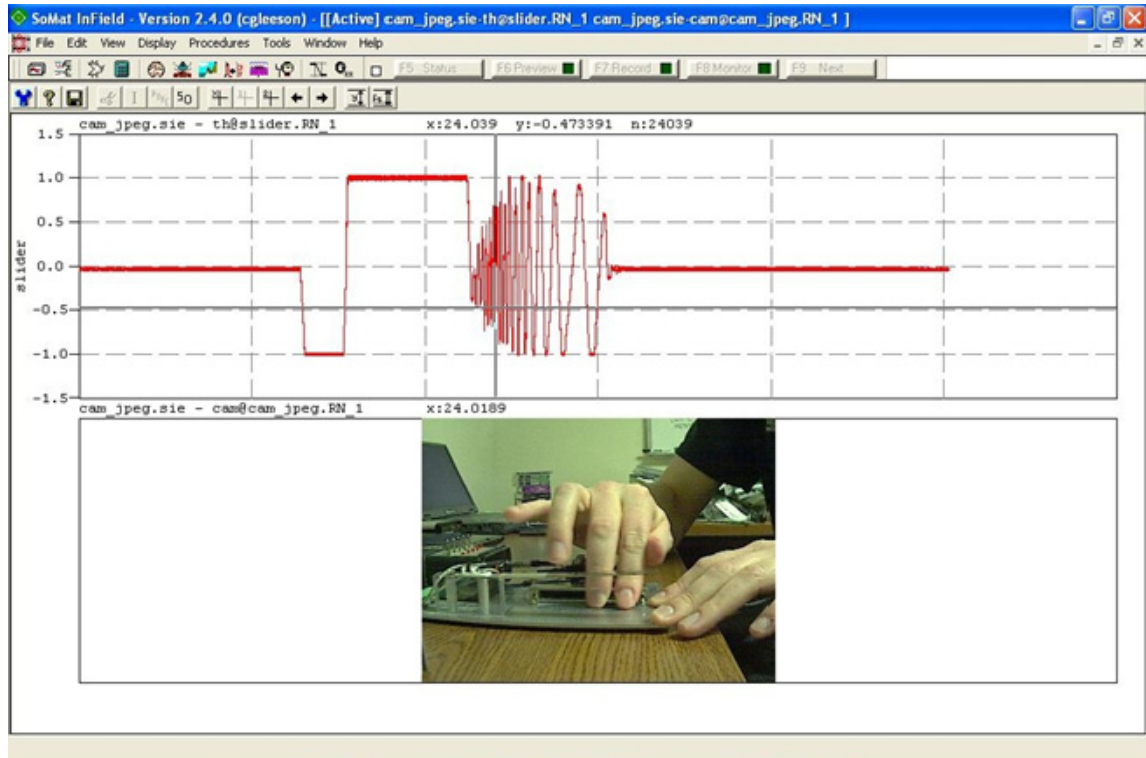
1.4 Step 3: View the Camera Data

To view the recorded data, open the SIE data file in InField:

1. Start InField and open the SIE file with the camera message data.
2. In the channels list, highlight the camera message channel and the time history channel and click the multiplot button.

Filename	Chan Name	MultiPlot of Selected Channels	Run #	NumPoints	DataMode Type	Directory
cam_peg.sie	th@bridge_1.RN_1		1	50320	TIMHIS	C:\Documents and Settings\cgleeson\Desktop
cam_peg.sie	th@slider.RN_1		1	50320	TIMHIS	C:\Documents and Settings\cgleeson\Desktop
cam_peg.sie	cam@cam_peg.RN_1		1	1514	MESSAGE	C:\Documents and Settings\cgleeson\Desktop

- In the resulting multiplot, use the cursor to scroll through the data. The image shows the camera frame at the time value of the cursor.



Notes on Viewing Camera Data in InField

Consider the following when viewing camera data in InField:

- If a second cursor is enabled, the images from the camera channel are still tracked to the first cursor. Return to single cursor mode to continue scrolling through the camera frames.
- The timestamp of the image is indicated by the x -value on the multiplot. The timestamp is test run time. To calculate real time, view the test start time in the metadata viewer and add the x -value in seconds.
- It is possible for the test not to record the full requested frame rate due to camera functionality. If the load on the network or the eDAQ is high, the camera may drop frames to avoid a lag in the data stream.
- When scrolling through the high sample rate time history channel, the camera image repeats itself for every sample of time history data until the next camera frame in the data stream.

2 Troubleshooting

Most of the issues that can cause the camera to not function properly are network related. Try the following to troubleshoot any camera issues.

2.1 Troubleshooting During Configuration

To troubleshoot during camera configuration:

- Repeat the camera configuration steps outlined in [“Configure the Camera” on page 10](#).
- Power cycle any switches or routers on the network.
- If camera cannot be found on the network, try entering the camera serial number in the Configure Networked Camera section of the eDAQ web interface to search for the specified camera.
- Reset the camera to its factory default as outlined in [“Reset the Camera to Factory Default” on page 9](#) and repeat the camera configuration.

If the problem persists:

- Consult with the local IT department to resolve any network issues.
- Contact HBM technical service. Please carefully record all troubleshooting results before contacting HBM.

2.2 Troubleshooting After Configuration

To troubleshoot a previously configured camera:

1. Ping the camera’s IP address to confirm that the eDAQ/ite can communicate with the camera. To ping the camera, navigate to the system tab on the web interface and click Command Prompt. In the command prompt, type “ping xxx.xxx.xxx.xxx”, where the x’s are the IP address for the camera.
2. If there is no reply, check all the network connections including Ethernet cables, routers and switches. Make sure the network LEDs on the camera and the POE switch are active.
3. If there is a ping reply but the problem remains, reset the camera to its factory default as outlined in [“Reset the Camera to Factory Default” on page 9](#) and repeat the camera configuration.

If the problem persists:

- Consult with the local IT department to resolve any network issues.
- Contact HBM technical service. Please carefully record all troubleshooting results before contacting HBM.

2.3 Configured Axis M7001 Does Not Show Video

When using the Axis M7001, make sure to close all like video feeds before recording data. Because of resolution restrictions, the M7001 cannot deliver video for recording or as a thumbnail and as a live, full-resolution feed (opened by clicking the thumbnail in the hardware specifics column of the web interface).

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