



DEWETRON

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# OXYGEN-GIGE-CAM SETUP

TECHNICAL REFERENCE MANUAL

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THE WORLD OF  
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## General information

### Support

DEWETRON has a team of people ready to assist you if you have any questions or any technical difficulties regarding the system. For any support contact your local distributor first or DEWETRON directly.

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The telephone hotline is available  
Monday to Friday between  
08:00 and 17:00 CET (GMT +1:00).

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Email: [support@dewetron.com](mailto:support@dewetron.com)  
Web: <http://www.dewetron.com>

The telephone hotline is available  
Monday to Friday between  
08:00 and 16:30 EST

### Warranty information

A copy of the specific warranty terms applicable to your DEWETRON product and replacement parts can be obtained from your local sales and service office.

### Legal information

#### Restricted rights legend

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8074 Grambach  
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# GENERAL INFORMATION

## Printing history

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## Setup

The following sections provide information on how to set up the DEWE-GIGE-CAM in OXYGEN. For any hardware related information refer to respective datasheets for [DEWE-GIGE-CAM-120](#) or [DEWE-GIGE-CAM-50-HD](#).

## Driver installation

In order to install the driver, the following steps have to be carried out:

- ▶ Hardware setup
- ▶ Driver installation

## Hardware setup

To setup the hardware, proceed as follows:

1. Connect the camera(s) to the CAMERA TRG/POW connector(s) at the DEWETRON system.
2. Connect the network cable(s) of the camera(s) to the switch or connect it directly to a Gigabit Ethernet port.

The hardware is now set up.

## Installation

To install the driver, proceed as follows:

1. Navigate to the `D:\Install\Drivers\DEWE-CAM-GIGE-120` or `D:\Install\Drivers\DEWE-CAM-GIGE-50-HD` directory depending on the camera type used and execute the `Vimba_v2.0_Windows.exe` setup file.
2. Start the installation setup process by confirming the execution (Fig. 1).

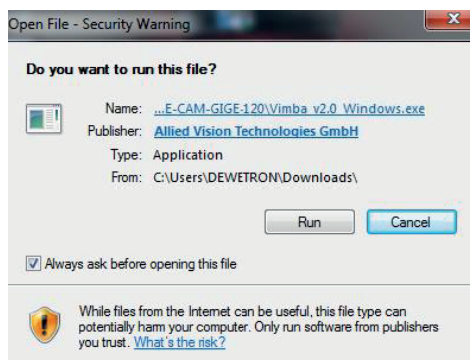


Fig. 1: Confirming the execution of the setup process

3. Select the `Vimba Applications` installation level, change the target folders, if desired, and click `Start` (Fig. 2).



Fig. 2: Choosing Vimba application settings

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- Exit the installation menu after the installation has been finished (Fig. 3) or install additional Vimba drivers for optimized network performance<sup>1)</sup>.

For the correct functionality of the camera in OXYGEN, no additional drivers are required. A restart of your system may be necessary and is recommended.



Fig. 3: Finished driver installation

- Open the Vimba Viewer after restarting.

The connected camera will show up in the *Detected Cameras* section. Open the camera menu by selecting the respective camera (Fig. 4).

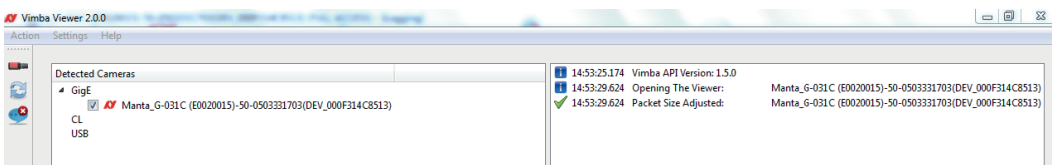


Fig. 4: Detected cameras

- Search for the current IP address in the camera menu (Fig. 5).

It can be found under *All > GigE > Current > Current IP Address*. It is recommended to use static IP addresses for the camera(s) since the default configuration is set to *Obtain an IP automatically*.

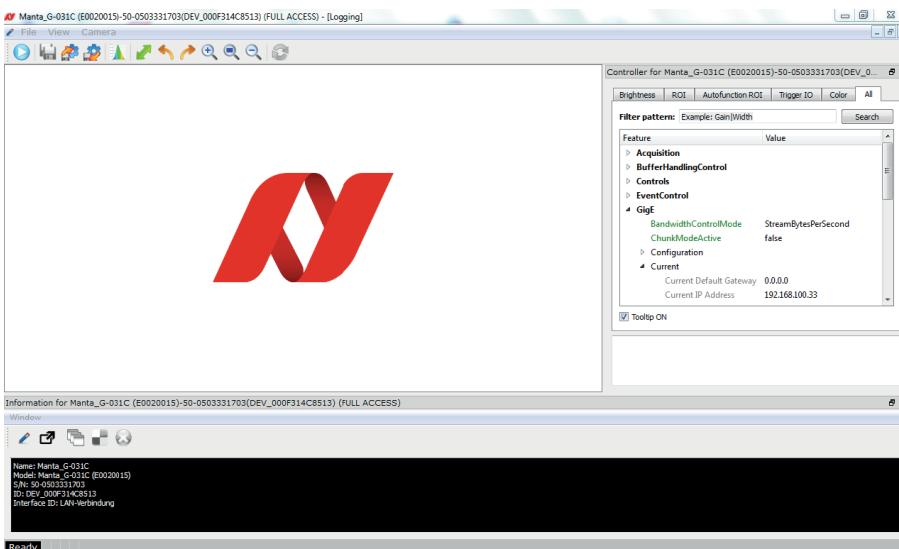


Fig. 5: IP address

The driver installation is now finished.

- For further information refer to [https://www.alliedvision.com/fileadmin/content/documents/products/cameras/various/installation-manual/GigE\\_Installation\\_Manual.pdf](https://www.alliedvision.com/fileadmin/content/documents/products/cameras/various/installation-manual/GigE_Installation_Manual.pdf)

## Manual IP address configuration

To change the IP address of the system manually proceed as follows:

1. Go to the *Windows Network and Sharing Center* (Fig. 6).

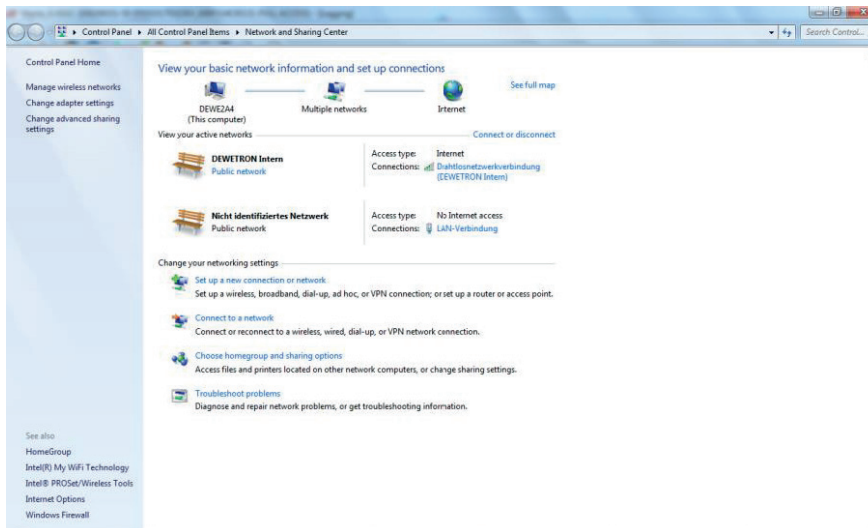


Fig. 6: *Windows Network and Sharing Center*

2. Click on *LAN Connection* to open the LAN connection status (Fig. 7).
3. Click on *Properties* to open the LAN connection properties.

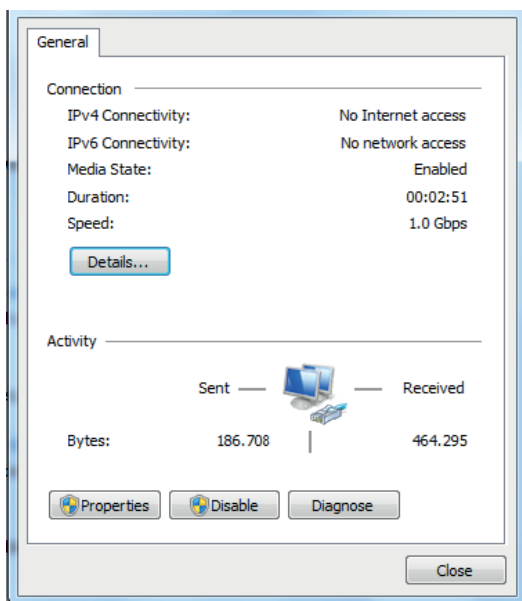


Fig. 7: *LAN connection properties*

4. Select *Internet Protocol Version 4(TCP/IPv4)* and click on *Properties* to open the Internet Protocol Version 4 (TCP/IPv4) properties (Fig. 8).

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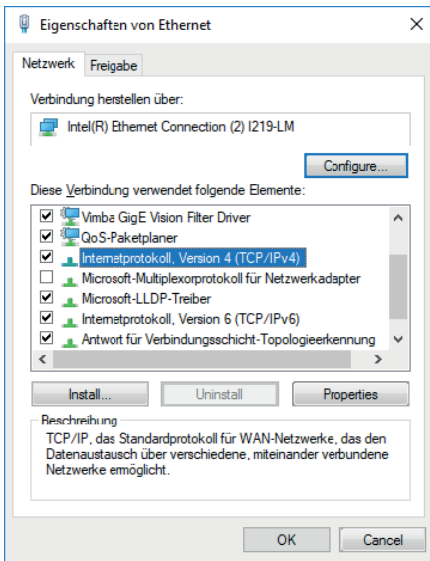


Fig. 8: Internet Protocol Version 4 (TCP/IPv4) properties

5. Select *Use the following IP address* and type an individual one that is within the same subnet range as the cameras (Fig. 9).

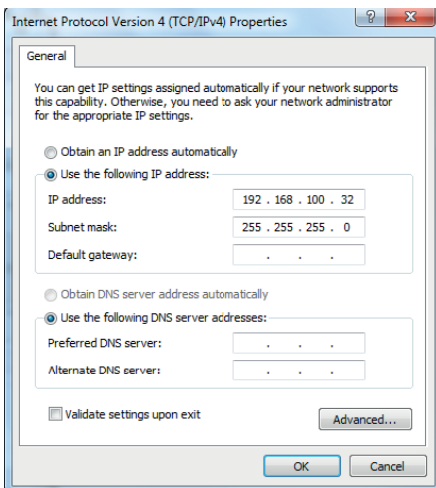


Fig. 9: Changing IP address

6. Save the setting by clicking on *OK*.

The IP address has now been changed to a manual one.

## Software settings in OXYGEN

The following settings can be made in OXYGEN and are described in more detail in the following sections.

- ▶ Activating the camera module
- ▶ Configuring the camera with a fixed frame rate
- ▶ Synchronizing the cameras with external AUX trigger
- ▶ Video settings
- ▶ Brightness settings
- ▶ Color settings
- ▶ Recording settings
- ▶ Using frame counter channels

### Activating the camera module

To use a GigE camera in OXYGEN, make sure that its hardware is enabled in the *DAQ Hardware* setup in the OXYGEN *System Settings* (Fig. 10).

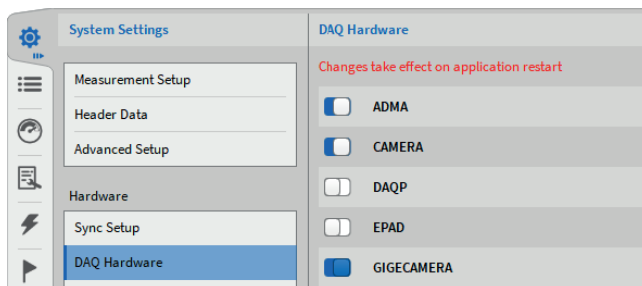


Fig. 10: Activating the camera module

### Configuring with a fixed frame rate

Open the *Data Channels* menu and turn the channel on by switching the *Activate Channel* button (make sure the *Recording* button is turned on).

- ▶ Enter the *Camera Settings* via clicking on the gear symbol and change certain camera properties if desired.
- ▶ It is also possible to select the desired *Fixed Frame Rate* (Fig. 11).

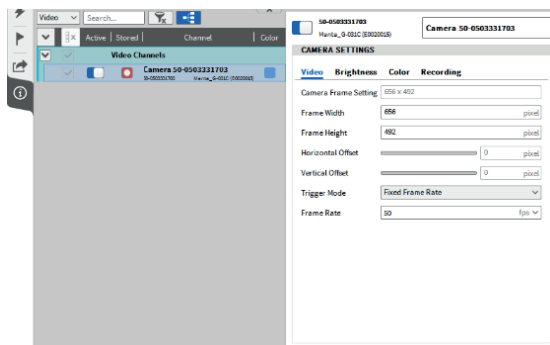


Fig. 11: Configuring the camera with a fixed frame rate

If multiple cameras are activated at the same time, they share the network bandwidth. If the bandwidth is not enough, OXYGEN will display a warning and the user needs to limit the frame rate.

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## Synchronizing with an external AUX trigger

The frame update of GIGE cameras can be triggered by OXYGEN. To do so, make sure that the *External AUX Output* (Fig. 12) is connected to the camera (available on TRION-BASE, TRION-TIMING and TRION-VGPS boards). The AUX connector can provide an LVTTTL signal to trigger the camera.

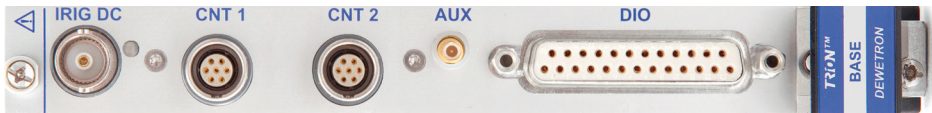


Fig. 12: Synchronizing the cameras with external AUX trigger

- ▶ To use the AUX channel, the TRION board must be plugged into the first card slot (the so-called Star slot) of your DEWE2/3 system.
- ▶ Go to the camera channel setup and switch the *Trigger Mode* to *AUX* (Fig. 13).

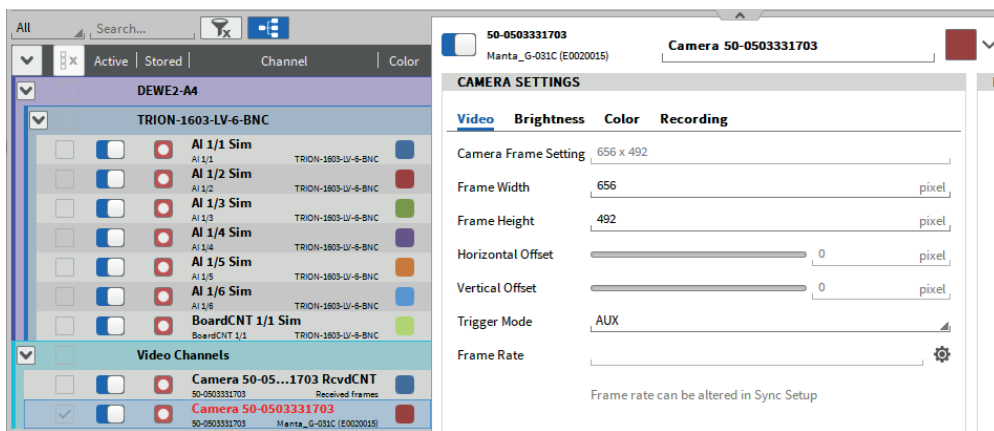


Fig. 13: Switching trigger mode to AUX

This will lock the *Frame Rate* field below the *Trigger Mode* and display a gear symbol button. Now you need to adjust the *Sync Out AUX Settings* in the *Sync Setup* which you can find in the *System Settings*. By clicking on the gear symbol, you can enter the *Sync Setup* directly.

- ▶ Enable the *Frequency (AUX)* output in the *Synchronization Output* section, select the desired signal frequency (which will be the frame rate of the camera) and set the *StartEdge* to *Rising* (Fig. 14). This means, that the camera frame is updated every time the signal has a rising edge.

Up to four cameras can be synchronized with one AUX output. The trigger mode of each camera must be changed to AUX and all cameras have the same frame rate.

**INFORMATION** Note that synchronization of GigE cameras to Falling signal edges is not supported.

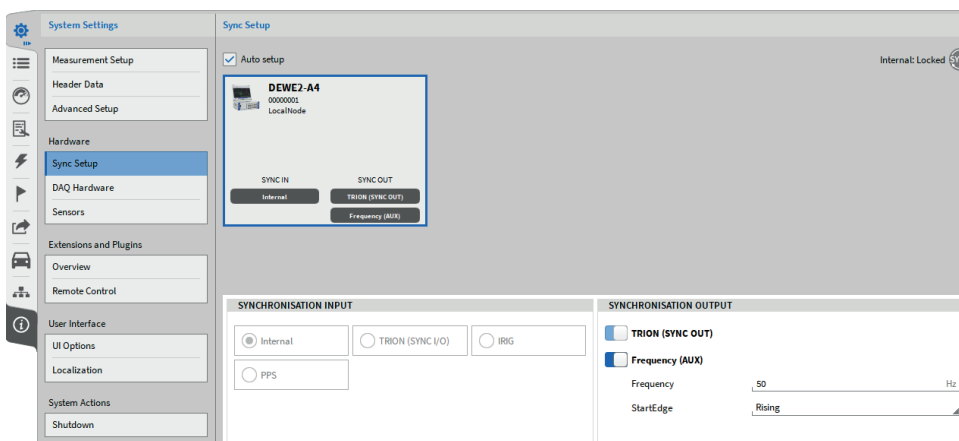


Fig. 14: Enabling the frequency output

## Video settings

The *frame size* (width and height), *horizontal* and *vertical offset* as well as the *Trigger mode* can be adjusted in the *Video* section of the camera settings (Fig. 15).

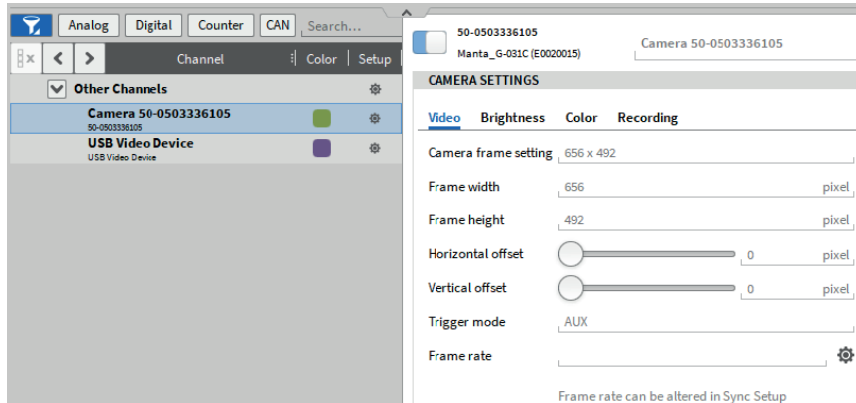


Fig. 15: Video settings

## Brightness settings

Exposure and gain settings of the camera can be edited in the *Brightness* section of the camera settings (Fig. 16).

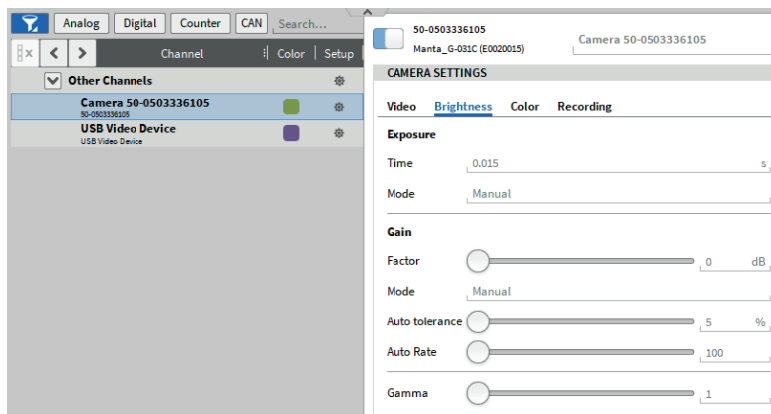


Fig. 16: Brightness settings

- ▶ Exposure time: Max. 1 s/frame rate; always slightly less, e.g. at 50 frames/s max. 17.9 ms exposure time.

**INFORMATION** The *Exposure time* setting is saved on the camera and can be very short due to previous settings, e.g. 1 ms. As a result, the image is completely dark (black).

- ▶ Gain: If the frame rate is high and/or the light intensity is low, a medium image brightness can be achieved by increasing the factor.

Clicking the *Once* button means “Once automatically” when the *Exposure* and *Gain* mode is set to *Manual*.

The *Automatic* settings are intended for image recording with more changing light conditions.

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## Color settings

Color settings can be edited in the *Color* section of the camera settings (Fig. 17).

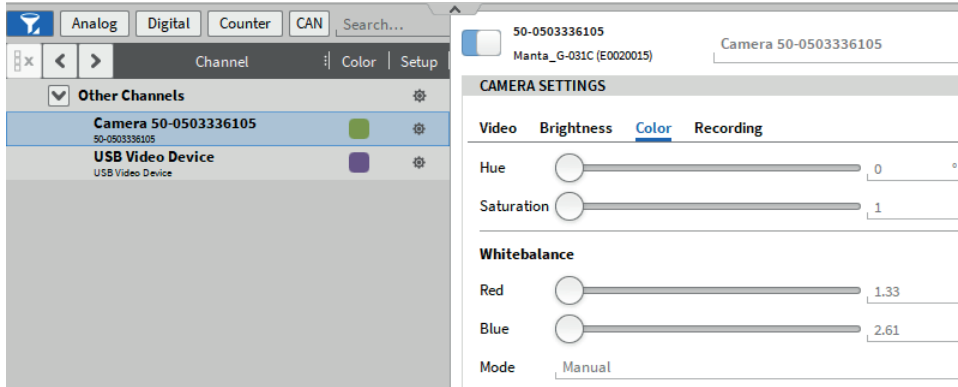


Fig. 17: Color settings

## Recording settings

By default, OXYGEN will store video data in a compressed \*.mkv format (Fig. 18). When recording at high frame rates, it may not be possible to compress the video while recording. In the *Recording* sub-menu which can be found in the camera settings the compression can be disabled and the video will be stored to a \*.dmv format.

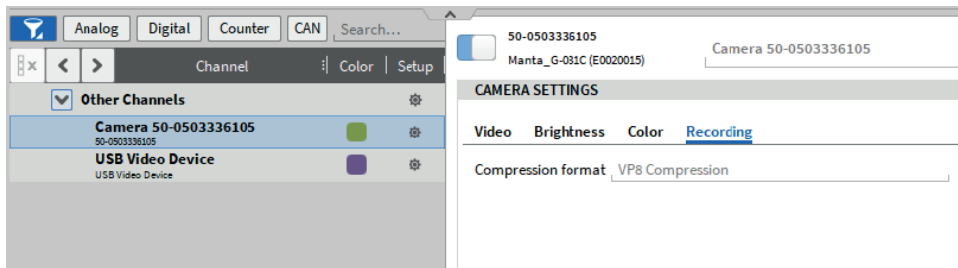


Fig. 18: Recording settings

## Using frame counter channels

The screenshot shows a table of 'Video Channels'. The table has columns for channel status, camera name, and frame count. Two channels are visible: 'Camera 50-05...1703 RcvdCNT' and 'Camera 50-0503331703'. The first channel is not checked and has a frame count of 2.855000e+2. The second channel is checked and has a frame count of 2147483647. The table also shows 'ACT' and 'Events' columns.

Channel	Camera	Received frames	ACT	Events
<input type="checkbox"/>	Camera 50-05...1703 RcvdCNT	2.855000e+2	ACT	
<input checked="" type="checkbox"/>	Camera 50-0503331703	2147483647		100 fps

Fig. 19: Frame counter channels

For each camera there is a counter channel that counts the number of received frames since acquisition start. The channel has the same name as the respective camera with RcvdCNT appended (Fig. 19). In order to activate the counter, you need to activate the channel (the channel is not activated automatically).

This channel increases by one each time a new image is received by OXYGEN from the camera. The time at which the image is updated is also stored and can be displayed in a table or visualized in a recorder. Thus, the information when the camera frame is updated, is available in this channel.

In case the camera is running with a fixed frame rate (see *Configuring with a fixed frame rate on page 11*), the instant of time the frame is updated is determined by the camera itself.

In case, the camera is running in AUX mode and is triggered by OXYGEN (see *Synchronizing with an external AUX trigger on page 12*), the instant of time the frame is updated is determined by OXYGEN.