

## Scope of this document

This application note is intended for Allied Vision customers who want to set up their first vision application with HALCON's HDevelop application. The following topics are included:

- Installing the required Vimba components
- Acquiring the first images with HALCON HDevelop

## Compatibility

HALCON is compatible with Allied Vision GigE Vision, USB 3.0 Vision, and IEEE 1394 cameras. To access all features and achieve a high performance, we recommend working with Vimba's GenICam-compliant transport layers and HALCON's GenICam interface.



### Host adapter settings

Select, install, and configure your host adapter as described in the corresponding manual for your camera (GigE: activate jumbo frames).



### Installation order

You can install HALCON either before or after installing Vimba.

## Downloads

### Software

- Vimba  
<https://www.alliedvision.com/en/products/software.html>
- HALCON  
<http://www.halcon.com/>

### GigE camera documentation

- Technical Manual (contains installation instructions, camera-specific information, and technical data)
- GigE Features Reference (provides a general overview of Allied Vision's GigE camera and driver features)

### USB camera documentation

- Alvium USB Cameras User Guide or Mako U Technical Manual (contains camera-specific information, installation hints, and technical data)
- Features Reference for Alvium or Mako U (provides a general overview of camera and driver features)

### IEEE 1394 camera documentation

- 1394 Installation Manual (contains installation instructions and camera I/O descriptions)
- Technical Manual (contains camera-specific technical data and camera features)



#### **Download camera documentation**

<https://www.alliedvision.com/en/support/technical-documentation.html>

## Installing the Vimba transport layers and drivers

The following action steps apply to Windows.

1. Start the Vimba installation and select **3rd Party Applications**.



Figure 1: Select 3rd Party Applications

2. Select **Transport Layer Interface**.

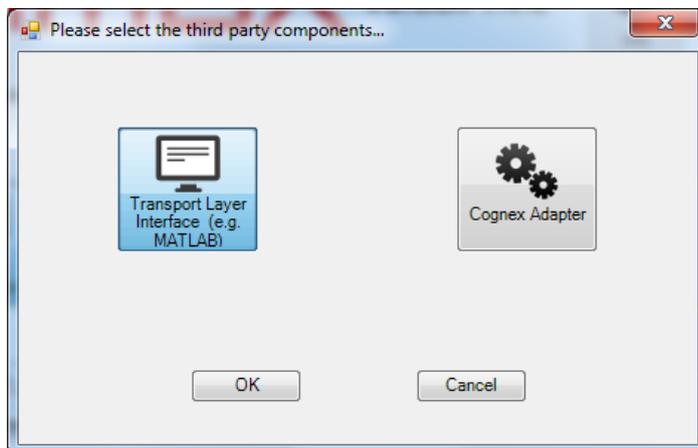


Figure 2: Select Transport Layer Interface

3. If you want to install Vimba Viewer additionally (recommended), click **Vimba Applications** and select **Camera Demonstration**.



Figure 3: Install Vimba Viewer

4. Make sure that **Install Vimba Drivers** is checkmarked before clicking **Exit**.



Figure 4: Install Vimba Drivers

5. Start the Vimba Driver Installer.
6. Install and activate the Vimba driver for your camera (find a detailed description in the Vimba Manual, Chapter Vimba Driver Installer).

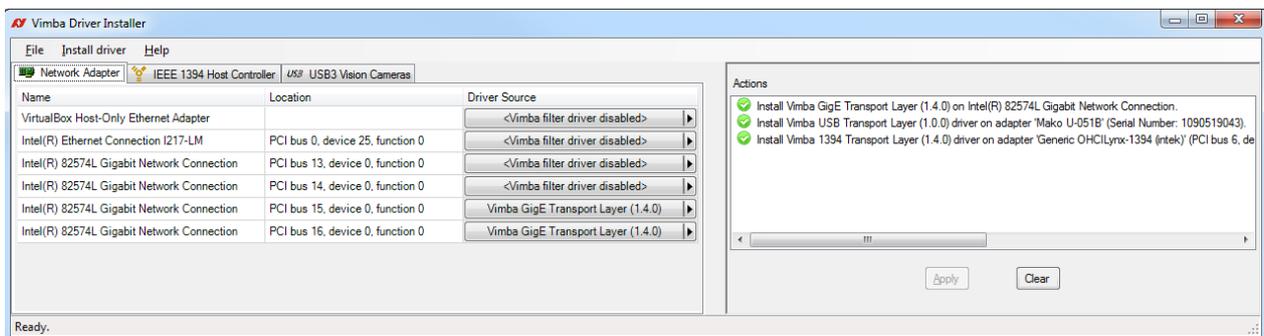


Figure 5: Vimba Driver Installer

## Configuring the camera in HDevelop

1. Start HDevelop and select the **Open New Image Acquisition** icon.



Figure 6: Open New Image Acquisition

The **Image Acquisition** window opens.

2. Click **Auto-detect Interfaces** and select **GenICamTL**. This choice opens your Allied Vision cameras via the Vimba transport layers.

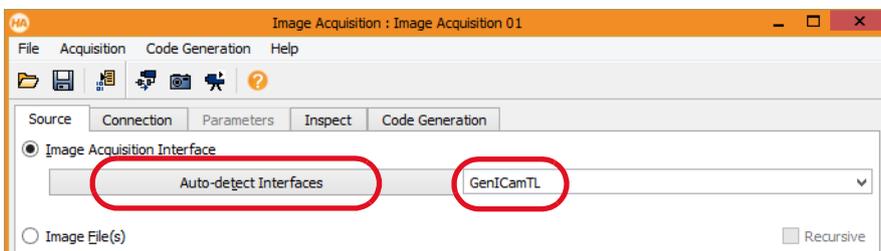


Figure 7: Select GenICamTL

3. Go to the **Connection** tab and select your camera in the *Device* drop-down field. If it is not shown, click **Detect**.
4. Click **Connect**.

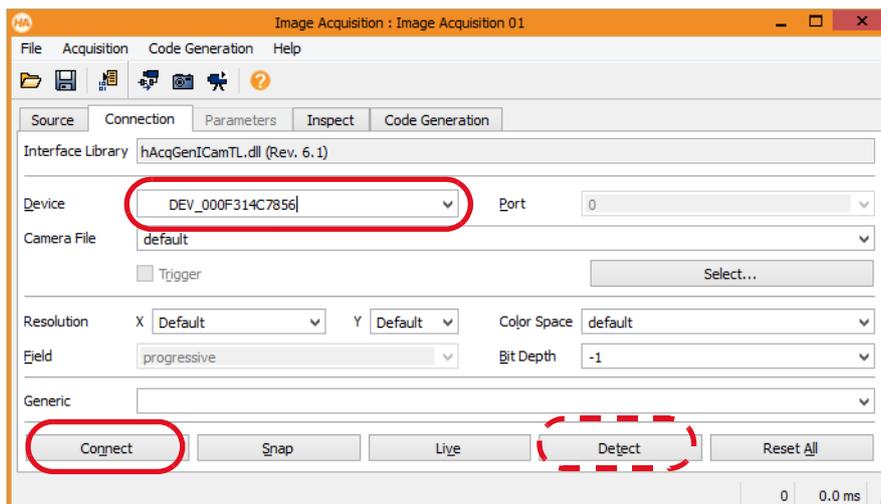


Figure 8: Camera connection

- Click **Snap** to acquire single images or click **Live** to start continuous image acquisition. Now you can view images from your Allied Vision camera.

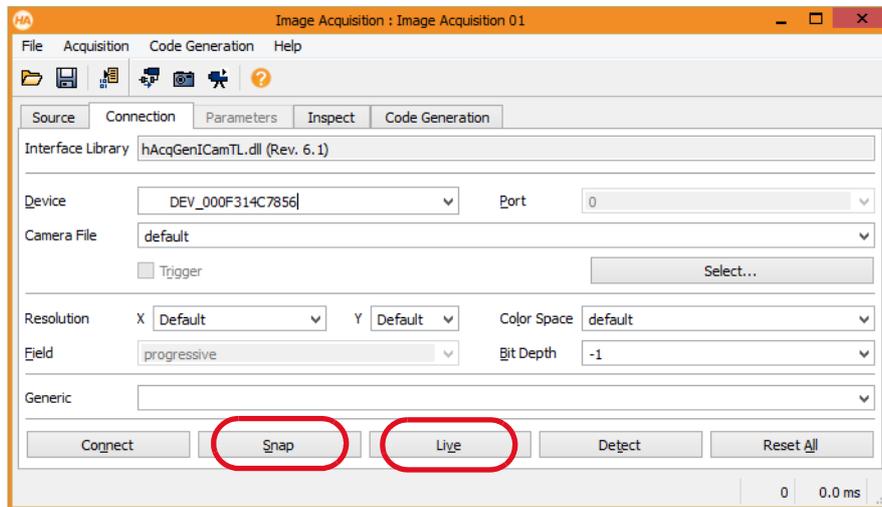


Figure 9: Initialize image acquisition

- Go to the **Parameters** tab and adjust the camera features. To access all features, select *Guru*. Some features cannot be changed while the camera is running.

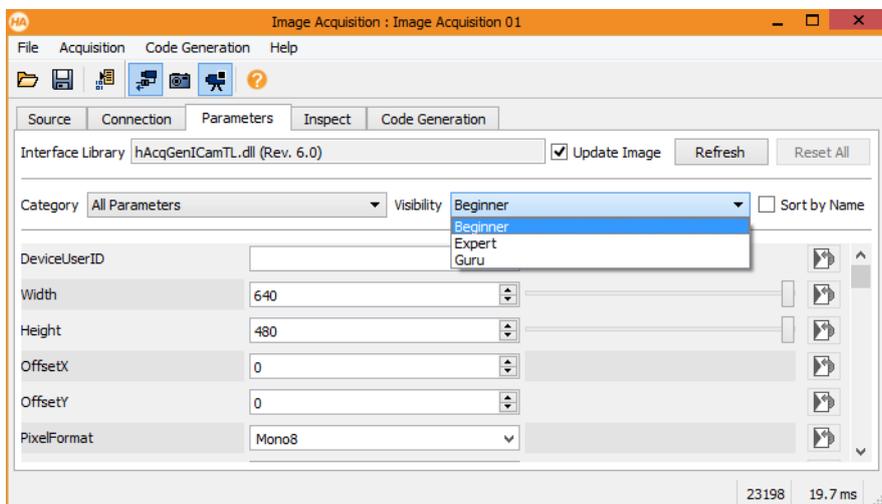


Figure 10: Adjust camera features



#### Mouse wheel adjusts features

The mouse wheel scrolls the feature list and also adjusts features if you mouse over them. Be careful not to accidentally change features.

To reset a feature, click its colored icon.

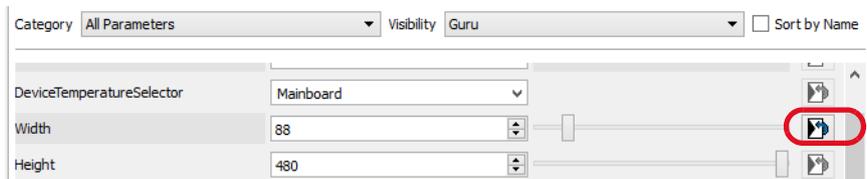


Figure 11: Resetting features

## Programming with HALCON

To learn programming with HALCON, watch MVTec's tutorials:

<https://www.mvtec.com/news-press/tutorial-videos/>

For example programs, select **File -> Browse HDevelop Example Programs -> Image-> Acquisition**. Search for GenICam examples.

## Troubleshooting

- Before starting HDevelop, make sure no other application uses the camera.
- Camera recognition may take a while, especially with GigE cameras.
- Test if your camera works with Vimba Viewer. If not, check the settings of your GigE, 1394, or USB host adapter.
- Open the Vimba Driver Installer and make sure the Vimba drivers are in use.
- If your camera does not reach the maximum frame rate, check if the exposure time is short enough. Example: If the exposure time is 100 ms, the camera cannot acquire more than approximately 10 fps.
- GigE cameras: Follow the instructions in the GigE Technical Manual.
- Follow the instructions in the HALCON documentation.

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