Allied Vision

USER GUIDE

Vimba X Cognex Adapter

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Prerequisites

To use Vimba X Cognex Adapter, you need:

- Cognex VisionPro
  - Tests were performed with version 9.25 (R) on Windows 10 and Windows 11.
- Vimba X for Windows
  - We recommend using version 2025-3 or higher (required before the Cognex Adapter installation)
- Vimba X Cognex Adapter
- An Allied Vision camera supported by Vimba X. Tests were performed with Alvium G1, Alvium G5, Alvium U, Goldeye Pro, and allPIXA neo 10GigE cameras.

Installation

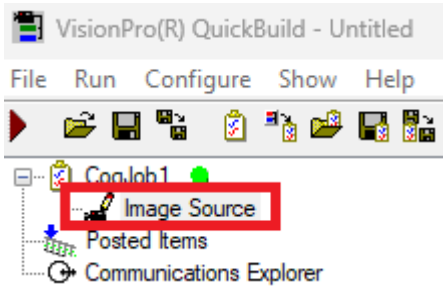
- You can install Cognex VisionPro before or after installing Vimba X and the Adapter. **In the VisionPro installation dialog, deselect eBus drivers for GigE cameras**. If Cognex eBus drivers are installed, they are used by Cognex and you cannot properly use the Vimba X Cognex Adapter. If they are installed, remove them from your PC.
- **Before installing Vimba X Cognex Adapter**, install Vimba X. For smooth camera operation, follow the instructions in chapter System Settings. We recommend configuring the camera with Vimba X Viewer.
- Install Vimba X Cognex Adapter.

The Adapter is provided as file *AdapterAVTVimbaX.dll*. Once it is installed additionally to Vimba X, VisionPro automatically finds the Adapter.

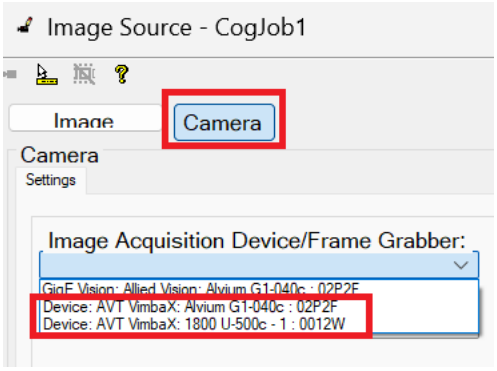
Getting started with QuickBuild

Once the Adapter is installed, all connected Allied Vision cameras appear as imaging devices in the Cognex QuickBuild application. To start using a camera, follow these basic steps:

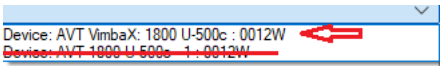
1. **Before starting QuickBuild**, connect your camera physically and make sure it is powered. Note that GigE camera recognition takes some time. You can use Vimba X Viewer to check if the GigE camera is listed before you start QuickBuild.
2. Make sure no other application uses the camera.
3. Start the QuickBuild application and double-click *Image Source*:



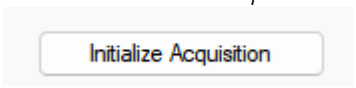
4. Click the *Camera* button and select your camera. Use *Device* to access the camera via the adapter library:



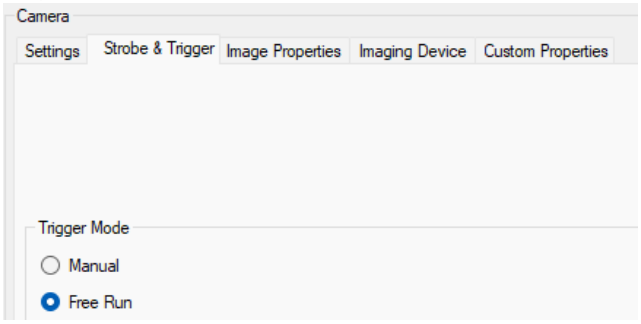
If you still have Vimba or other transport layers installed, make sure to select Device: AVT VimbaX and the camera's serial number:



5. Click the *Initialize Acquisition* button to establish a connection to the camera.



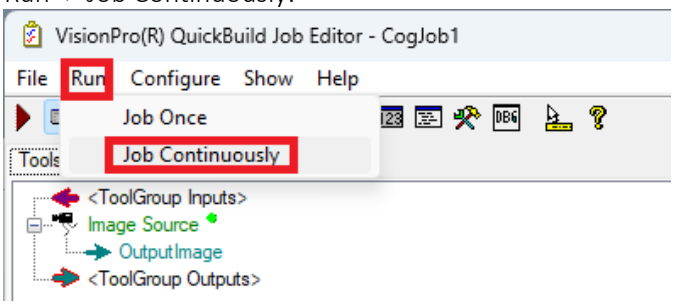
6. Recommendation: Go to the Strobe & Trigger tab and select *Free Run* mode for continuous acquisition.



Free Run mode is the most common trigger mode supported by all cameras. Other trigger options are not necessarily supported by every camera model.

- VisionPro trigger modes:
  - Manual: Acquire an image manually without waiting for an external trigger signal. The image acquisition is initiated when a software command is sent to the adapter. Note that some cameras don't support software trigger commands.
  - Free Run: Acquisitions start automatically as soon as the previous acquisition is completed (continuous acquisition).
  - Hardware Auto: Image acquisition starts when a transition on an external trigger line is detected.
  - Hardware Semi-Auto: Hardware Semi-Auto triggers to acquire an image when you click *Run* and the application detects a transition on an external trigger line.
  - Trigger Low To High: Changes the trigger signal polarity.

To start image acquisition, click the camera icon within the Image Source dialog or go to the QuickBuild Job Editor. To acquire one image, click the Play icon. To acquire continuously, select Run -> Job Continuously:



Supported pixel formats

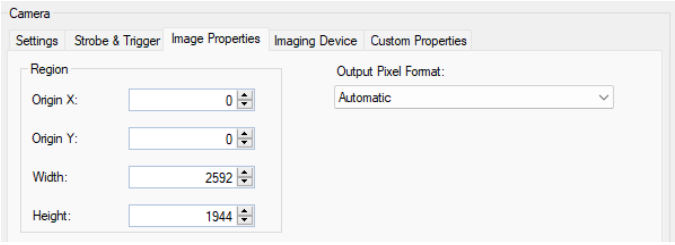
VisionPro supports the following pixel formats:

- MONO8
- MONO10
- MONO10PACKED
- MONO12
- MONO12PACKED
- MONO14
- MONO16
- RGBPLANAR8

If you use a pixel format that is not compatible to VisionPro, the adapter library automatically converts it into the closest compatible one.

Region of Interest (ROI)

On the Image Properties tab, a ROI can be specified. The parameters set here are transferred to the camera. Most cameras reach a higher speed when a smaller ROI is applied.



Features

All compatible camera features can be accessed via the *Custom Properties* tab (writeable features only) and via the *Imaging Device* tab.

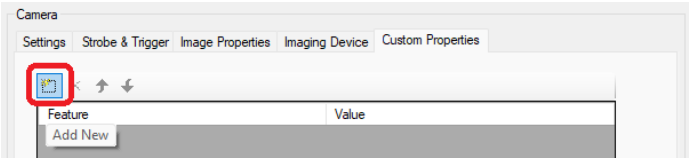
The following feature types are compatible with VisionPro:

- Bool
- Command
- Enum
- Float
- Int
- String

RAW features are not supported by Cognex.

Custom properties tab

To add a camera feature, click the **Add New** icon:



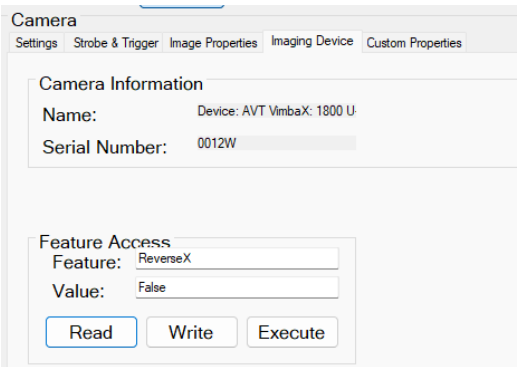
A list with all VisionPro compatible features is displayed. Click a feature to add it to the Custom Properties list. If a feature is changed subsequently in the list, the new value is transmitted to the camera by either pressing RETURN or clicking a different feature in the list.

To remove a custom property from the list, click the **Delete** icon next to the Add New button.

To move a feature up or down in the list, use the corresponding icons.

Imaging Device tab

The *Imaging Device* tab enables you to type in a feature name instead of searching it in a list:



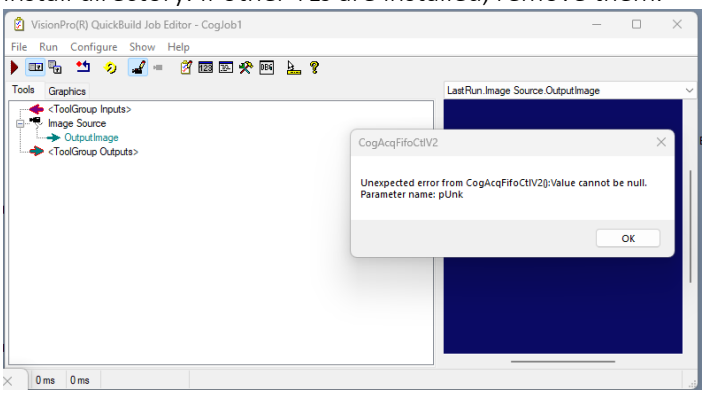
Tips and troubleshooting

If Quick Build hangs during startup:

- Open Task Manager. End QuickBuild and ACQ_MODULE_AIK.

If the camera is not listed, note the following:

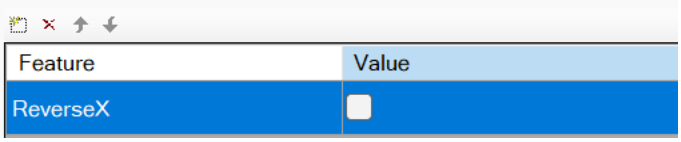
- Each camera must be connected before starting VisionPro.
- With GigE cameras, recognition may take several seconds. If you connect the GigE camera to an Ethernet port that was previously used for internet connection, connecting the camera immediately may cause Error -3.
- GigE cameras: If Cognex eBus drivers are installed, remove them from your PC.
- USB cameras: Use Vimba X Driver installer to make sure the driver is installed.
- Check with Vimba X Viewer if the camera is listed and acquires images. If not, see the Vimba X documentation.
- If your camera still does not show up, you might need to adjust the memory settings for the adapter library. To do that, modify the Windows registry:
    - In the Windows Start menu, select *Run.*
    - Type *regedit* and press the RETURN key.
    - Search for the key: HKEY_LOCAL_MACHINE\SOFTWARE\cognex\AIK\AdapterAVTVimbaX.
    - Edit the PoolSize property. By default it is set to 0x48000000 (1207959552). For configurations with large image size cameras, you may have to increase this value. Change it and restart QuickBuild to verify if the new value is functional.
- The “pUnk” error indicates that certain transport layers cause an issue. If Vimba (the predecessor SDK of Vimba X) is installed: Remove the 1394 transport layers from the Vimba install directory. If other TLs are installed, remove them.



- DeviceReset not possible: QuickBuild doesn’t update the camera list. Therefore, a Device Reset causes an error.

If features don’t work as expected:

- If you don’t see the checkbox, enlarge the row of the table to make it visible:



- On the *Custom Properties* tab, acquisition is stopped and started again automatically. Therefore, it seems like all features can be changed during image acquisition.

- On the *Imaging Device* tab, image acquisition is not stopped and started again automatically. You cannot change some features during acquisition.
- In some cases, QuickBuild allows you to enter invalid values, which it doesn't apply. For example, if you enter a higher value for Width than the camera supports, the displayed value is not updated to the actual value.

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