



# Machine Vision Camera SDK Plugin (Sherlock)

User Manual

## **User Manual**

### **About this Manual**

**This Manual is applicable to Machine Vision Camera SDK Plugin (Sherlock).**

**The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website.**

**Please use this user manual under the guidance of professionals.**

### **Legal Disclaimer**

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# Chapter 1 Overview

**This manual mainly introduces the used plugin of connecting machine vision camera based on Sherlock system.**

## Chapter 2 Configuration

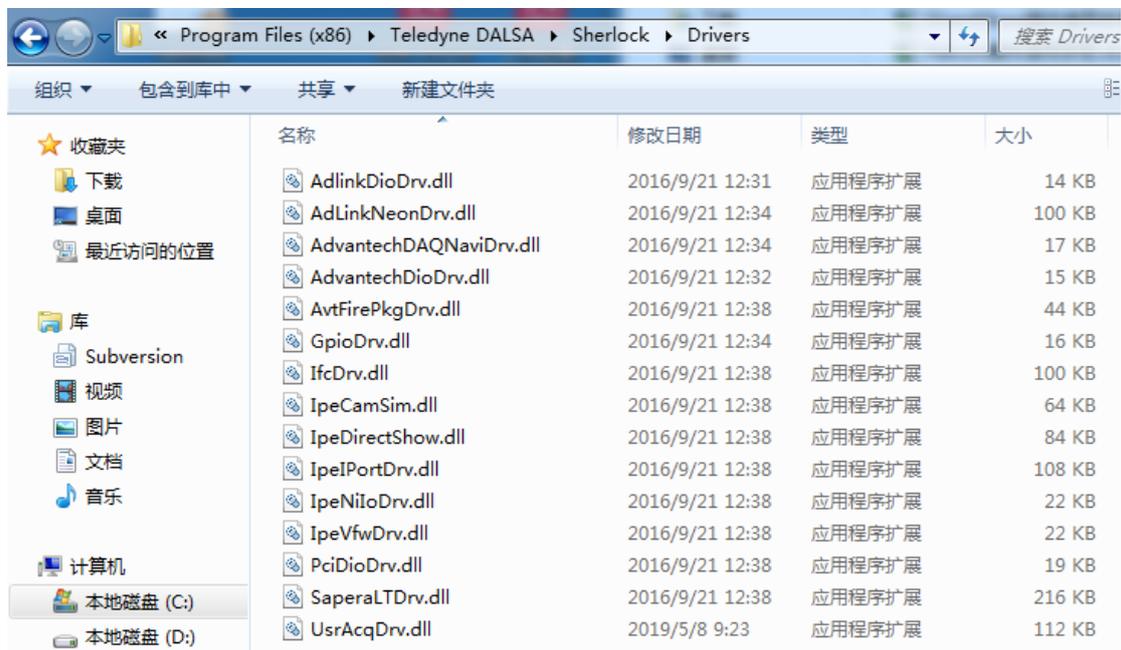
### 2.1 Copy Dynamic Link Library

**Steps:**

1. Find the DalsaSherlock folder in the MVS install directory `development\ThirdPartyPlatformAdapter`. Copy the file `UsrAcqDrv.dll` to corresponding directory: `C:\Program Files (x86)\Teledyne DALSA\Sherlock\Drivers`.

**Note:**

The destination directory depends on the installation directory. If the system is 64-bit, copy the file to the corresponding directory.



### 2.2 Configure Camera Parameters

**Steps:**

1. Open MVS, and configure the IP address and parameters of machine vision camera.

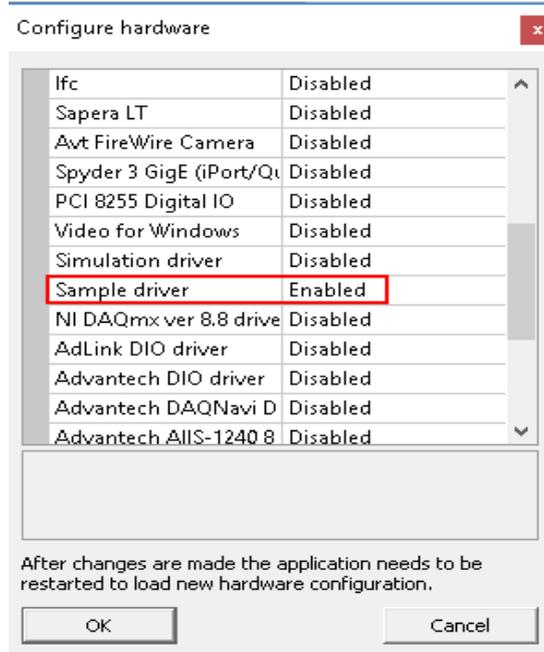
**Note:**

Ensure that PC and camera are on the same network segment, and camera can get streams from MVS.

### 2.3 Configure Camera Driver

**Steps:**

1. Click **Options** and **Acquisition** on the menu bar of Sherlock window.
2. Select **Sample driver** and enable it.

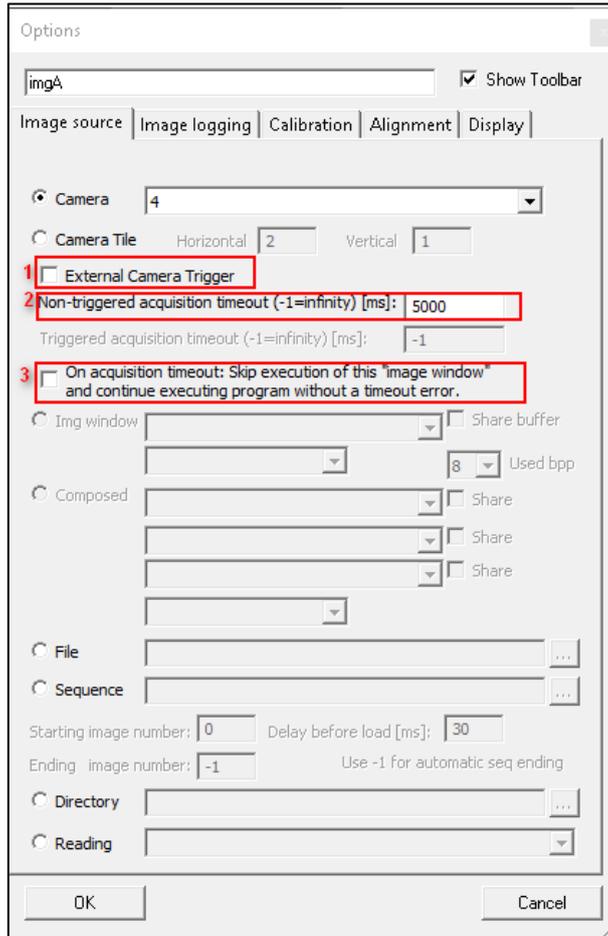


3. Close the Sherlock system and restart it to take effect.

## 2.4 Configure Camera Connection

### **Steps:**

1. Enable/Disable the trigger mode.
  - 1) Click **Image window** and click **Options**.



2) Set the mode as trigger mode or continuous mode.

**Note:**

Trigger mode line0: Select **External Camera Trigger**.

Continuous mode: Not select **External Camera Trigger**.

3) (Optional) Set the timeout period according to your requirement.

4) Select **On acquisition timeout: Skip execution of this "Image window" and continue executing program without a timeout error.**

2. Set the camera IO output

1) Click **View** in the menu bar.

2) Select **Digital Outputs** to display the IO output status.

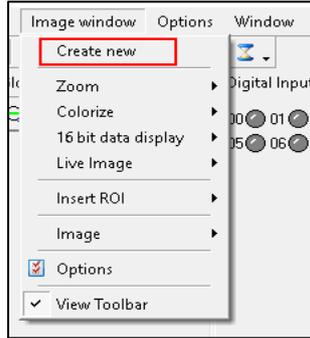
3) Enable or Disable IO output.

**Note:**

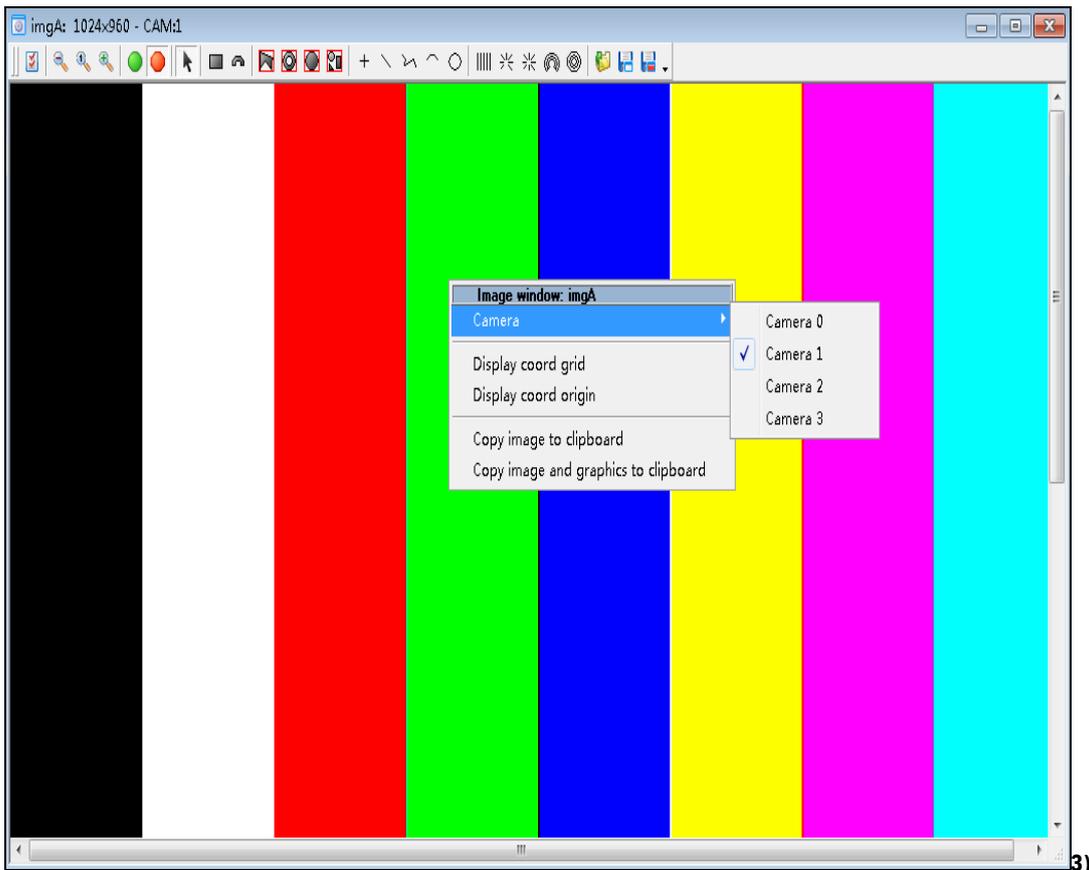
When IO output is ON, the camera will output IO signal, and line inverter will be selected.

When IO output is Off, the camera will not output IO signal, and line inverter will not be selected.

3. Enable multiple cameras.



- 1) Click **Image window** on menu bar, and select **Create new** to open new window.
- 2) Right-click the image of new window, and select **Camera**.



- 3) Select the camera required for streaming.

## 2.5 Open Multiple Sherlock Softwares

### Steps:

1. Set Drivers.ini file.
  - 1) Open the Drivers.ini file in the path: *C:\ProgramData\Teledyne DALSA\Sherlock\Drivers*.

**Note:**  
The folder ProgramData is hidden by default. You should show the hidden files first.
  - 2) Set the ENABLED value of Sample driver to 1.

```

NAME      = Simulation driver
FILE      = IpeCamSim.dll
CONFIG    = IpeCamSim.ini
ENABLED   =0

[DRIVER7]
NAME      = Sample driver
FILE      = UsrAcqDrv.dll
CONFIG    = UsrAcqDrv.ini
ENABLED   =1

[DRIVER8]
NAME      = NI DAQmx ver 8.8 driver
FILE      = IpeNiIoDrv.dll
CONFIG    = IpeNiIoDrv.ini
ENABLED   =0
    
```

2. Create Drivers1.ini and Drivers2.ini files.

- 1) Create two copies of the Drivers.ini file in the directory: *C:\ProgramData\Teledyne DALSA\Sherlock\Drivers*.
- 2) Rename the two copies as Drivers1.ini, and Drivers2.ini.
- 3) Set the ENABLE value of Sample driver in file Drivers1.ini and Drivers2.ini to 1.

<pre> [DRIVER7] NAME      = Sample driver FILE      = UsrAcqDrv.dll CONFIG    = UsrAcqDrv1.ini ENABLED   =1         </pre>	<pre> [DRIVER7] NAME      = Sample driver FILE      = UsrAcqDrv.dll CONFIG    = UsrAcqDrv2.ini ENABLED   =1         </pre>
--	--

4) Save and close Sherlock software.

3. Create UsrAcqDrv1.ini and UsrAcqDrv2.ini files.

- 1) Create two files (UsrAcqDrv1.ini and UsrAcqDrv2.ini) in the directory: *C:\Program Files (x86)\Teledyne DALSA\Sherlock\Bin*, or in the directory: *C:\ProgramData\Teledyne DALSA\Sherlock\Drivers*.

**Note:**

The name of created two \*.ini files should correspond to the CONFIG value of Sample driver in above Drivers1.ini and Drivers2.ini

<pre> UsrAcqDrv1.ini 1 [SerialNumber] 2 Cam1=00683207552 3 Cam2=00683207789     </pre>	<pre> UsrAcqDrv2.ini 1 [SerialNumber] 2 Cam1=00654048175 3     </pre>
<pre> UsrAcqDrv1.ini 1 [UserID] 2 Cam1=Sherlock_Test1 3     </pre>	<pre> UsrAcqDrv2.ini 1 [UserID] 2 Cam1=Sherlock_Test2 3 Cam2=Sherlock_Test3     </pre>

- 2) Input the serial number (SerialNumber) or user defined name (UserID) of required cameras.

**Note:**

- By default, only the serial number (SerialNumber) will be loaded when both serial number (SerialNumber) and user defined name (UserID) exist.
- Up to 16 cameras can be added in each \*.ini file.

3) Save and close Sherlock software.

4. Save MyTest.ivs file.

- 1) Run Sherlock software.

- 2) Click **Program** and click **Save As**.
- 3) Set the file name as **MyTest.ivs**.
- 4) Save the file to directory: **C:\Program Files (x86)\Teledyne DALSA\Sherlock\Bin**
- 5) Close Sherlock software.
5. Create **Cam1.Bat** and **Cam2.bat** files.
  - 1) Create **Cam1.bat** and **Cam2.bat** files in the directory: **C:\Program Files (x86)\Teledyne DALSA\Sherlock\Bin**.
  - 2) Edit the file **Cam1.bat** as:  
start "" "C:\Program Files (x86)\Teledyne DALSA\Sherlock\Bin\IpeStudio.exe" -acq:Drivers1.ini -load: MyTest.ivs
  - 3) Edit the file **Cam2.bat** as:  
start "" "C:\Program Files (x86)\Teledyne DALSA\Sherlock\Bin\IpeStudio.exe" -acq:Drivers2.ini -load: MyTest.ivs

**Notes:**

- For different operating system the directory is different. The above directory (**C:\Program Files (x86)\Teledyne DALSA\Sherlock\Bin**) is for Windows 7 32-bit system. If the system is Windows 7 64-bit, the directory is: **C:\Program Files\Teledyne DALSA\Sherlockx64\Bin**.
  - The referenced\*.ini and \*.ivs files name should correspond to the previous settings.
6. Connect camera via multiple Sherlock systems.
    - 1) Double-click **Cam1.bat** to run the Sherlock software and connect the cameras, which are added in the **Cam1.bat** file.
    - 2) Double-click **Cam2.bat** to run the Sherlock software and connect the cameras, which are added in the **Cam2.bat** file.

**Notes:**

- If you want to change the connected cameras, edit the serial number in **UsrAcqDrv\*.ini** files.
- If there is no **UsrAcqDrv\*.ini** file or no keyword **Cam\*** in **UsrAcqDrv\*.ini** file, all the cameras will be enumerated by default.

## 2.6 Connect CoaXPress Camera

1. Configure file format

[GenTLPath]

PATH=C:/123.cti

[InterfaceID]

IF1=FG0

[SerialNumber]

Cam1=12345678911

Cam2=12345678922

- 1) Configure the **cti** file path as the **GenTL Path**.
- 2) Choose the interface number as the **InterfaceID**. Support maximum of 8 interfaces, from **IF1** to **IF8**. **FG0** is the interface name of the framegrabber.
- 3) Select the desired camera number as the **SerialNumer**. Support maximum of 16 cameras, from **Cam1** to **Cam16**.

## 2.7 Configure UsrAcqDrv.ini File

1. Set the node **SerialNumber** or node **UserID** for specifying cameras to open.

**Note:**

Up to 16 cameras can be added in each \*.ini file.

2. Set the node **ImageNodeNum** for configuring the image buffer.

**Note:**

The node **ImageNodeNum** is user defined, and the format is **UserValue=value**, of which **UserValue** indicates the node type, and the value is the node value.

3. Set other nodes according to **MvCameraNode.xlsx** file under the **MVS** installation directory:

*Development \ Documentation \ MvCameraNode.xlsx*

```

1  [SerialNumber]
2  Cam1=00646498714
3
4  [ImageNodeNum]
5  UserValue=3
6
7  [SensorShutterMode]
8  EnumValue=0
9
10 [Width]
11 IntValue=1024
12
13 [AcquisitionFrameRate]
14 FloatValue=15.7
15
16 [AcquisitionFrameRateEnable]
17 BoolValue=1
    
```

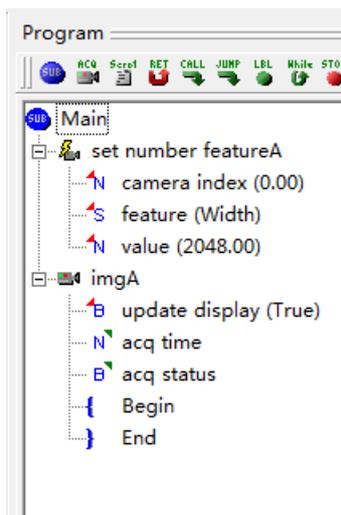
**Note:**

The comparison of node types in \*.ini file and **MvCameraNode.xlsx** is shown below:

Node Type in *.ini File	Node Type in MvCameraNode.xlsx
UserValue	It indicates the user defined node
EnumValue	IEnumeration
IntValue	IInteger
FloatValue	IFloat
BoolValue	IBoolean
StringValue	IString

## 2.8 IO:Camera Support

You can get or set the camera parameters by **IO:Camera**, all attributes nodes are supported.



Context Menu Options:

- Undo Paste (Ctrl+Z)
- Copy (Ctrl+C)
- Delete (Del)
- Paste (Tree) (Ctrl+V)
- Paste (Selected only)
- Toggle Breakpoint
- Remove All Breakpoints
- Toggle Enable Execution
- Enable All Execution
- Find in this Subroutine
  - General
  - Array: Boolean
  - Array: Line
  - Array: Number
  - Array: Point
  - Array: String
  - Boolean
  - Geometric
  - IO: Algorithms
  - IO: Annotations
  - IO: Calibration
  - IO: Camera
    - Disable Sapera GigE event
    - Enable Sapera GigE event
    - Flush acquired images
    - Get bool feature
    - Get camera count
    - Get missed frame count
    - Get number feature
    - Get number of acquired lines
    - Get Sapera GigE event counter
    - Get string feature
    - Halt camera ACQ
    - Read register
    - Send command
    - Set bool feature
    - Set Brightness
    - Set Lut
    - Set number feature
    - Set Sapera GigE event counter

