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

REGARDING TO THE PRODUCT WITH INTERNET ACCESS, THE USE OF PRODUCT SHALL BE WHOLLY AT YOUR OWN RISKS. OUR COMPANY SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER ATTACK, HACKER ATTACK, VIRUS INSPECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, OUR COMPANY WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

Contents

Chapter 1 Overview

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

Chapter 2 Configuration

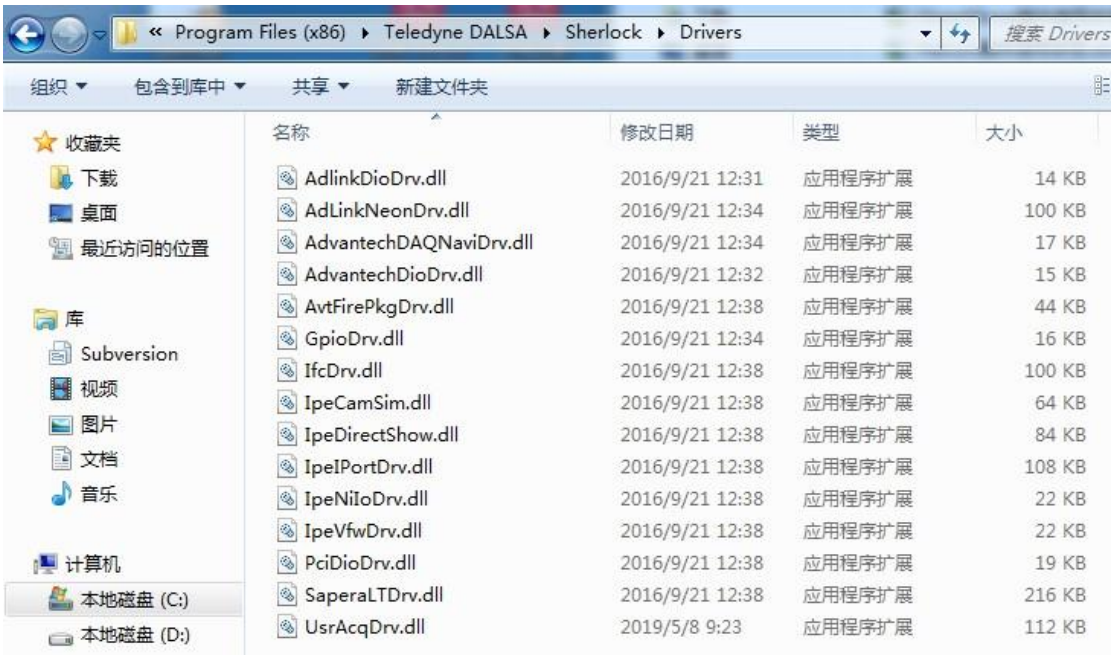
2.1 Copy Dynamic Link Library

Steps:

1. Find the DalsaSherlock folder in the Client install directory evelopment\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 client, and configure the IP address and parameters of machine vision camera.

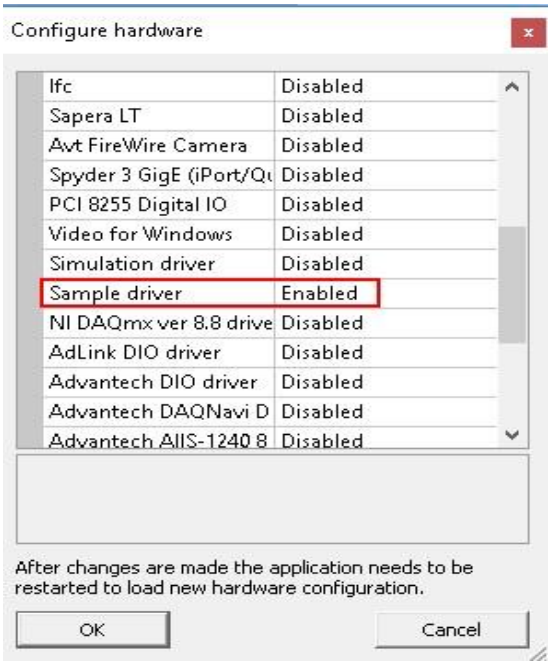
   Note:

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

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.

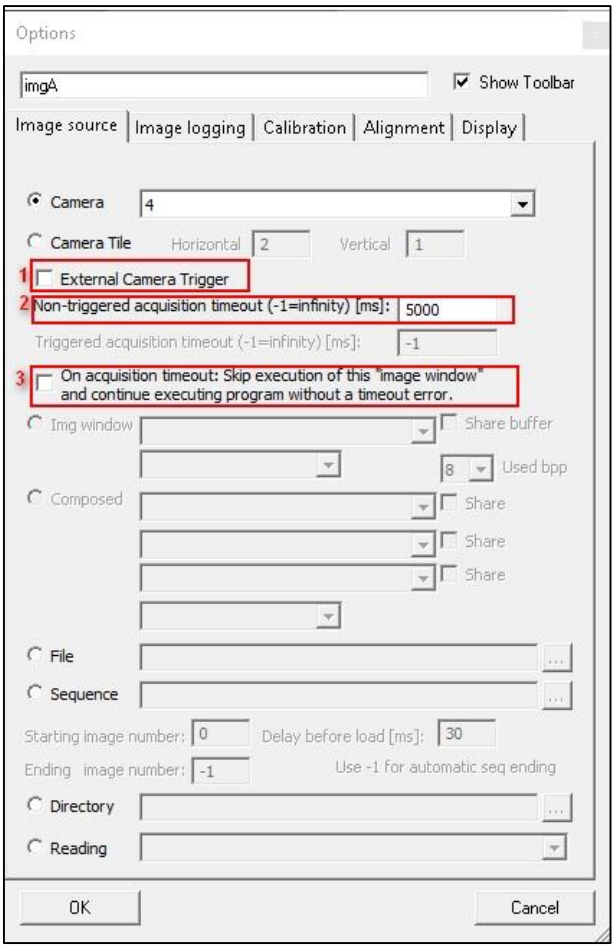


3. Close the Sherlock system and restart it to take effect.

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.

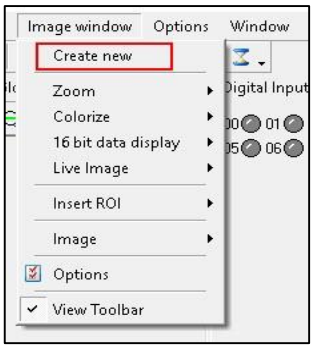
3) Enable or Disable IO output.

Note:

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

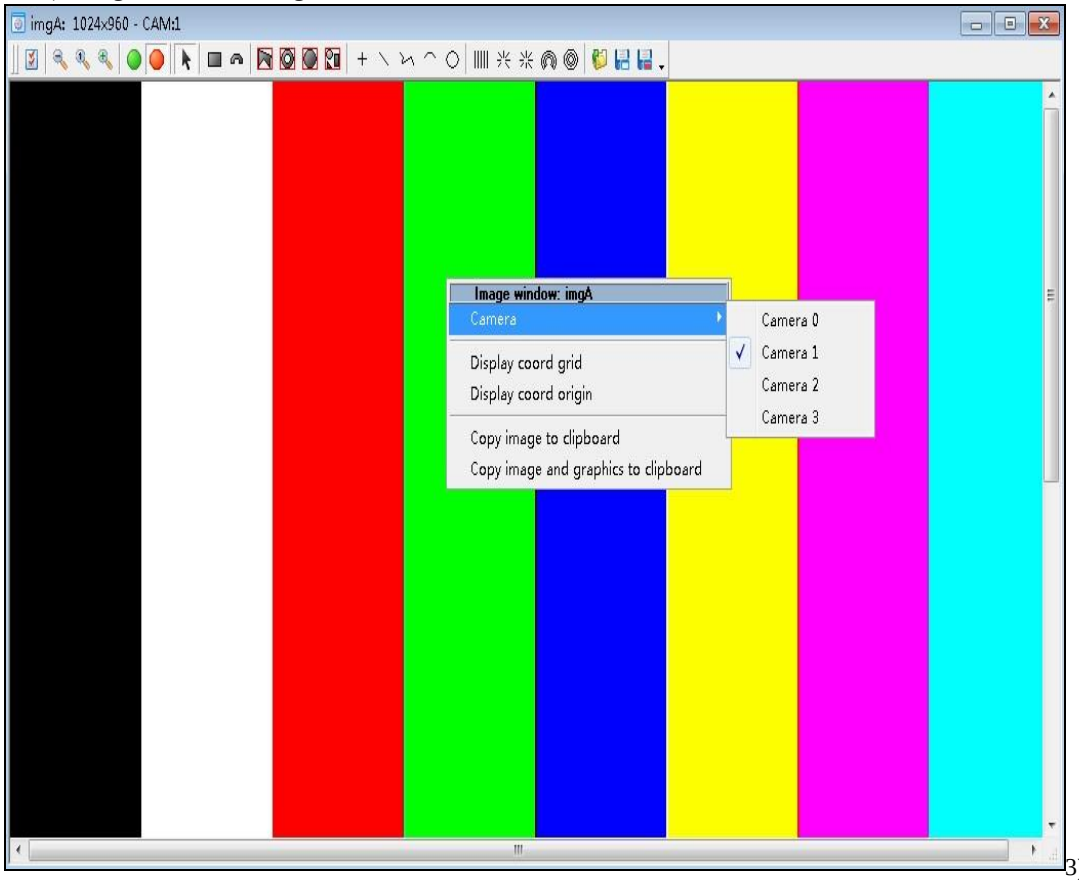
When IO output is Off, the camera will not output IO signal, and line inverter will not be selected.

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)

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.

```
[DRIVER7]
NAME    = Sample driver
FILE    = UsrAcqDrv.dll
CONFIG  = UsrAcqDrv1.ini
ENABLED =1
```

```
[DRIVER7]
NAME    = Sample driver
FILE    = UsrAcqDrv.dll
CONFIG  = UsrAcqDrv2.ini
ENABLED =1
```

   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

UsrAcqDrv1.ini

```
[SerialNumber]
Cam1=00683207552
Cam2=00683207789
```

UsrAcqDrv2.ini

```
[SerialNumber]
Cam1=00654048175
```

UsrAcqDrv1.ini

```
[UserID]
Cam1=Sherlock_Test1
```

UsrAcqDrv2.ini

```
[UserID]
Cam1=Sherlock_Test2
Cam2=Sherlock_Test3
```

   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. FGO 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 SerialNumer or node UserID for specifying cameras to open.

   Note:

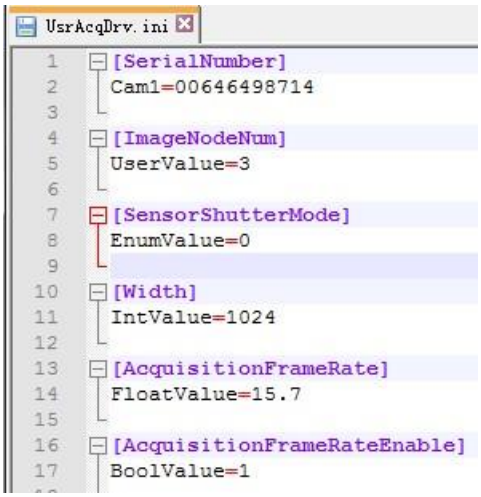
   Up to 16 cameras can be added in each *ini file.

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 Client installation directory: Development\Documentation\ MvCameraNode.xlsx.



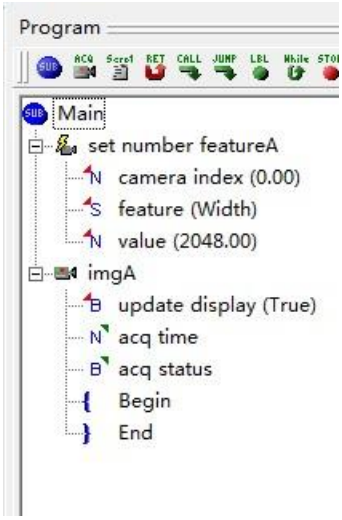
Note:

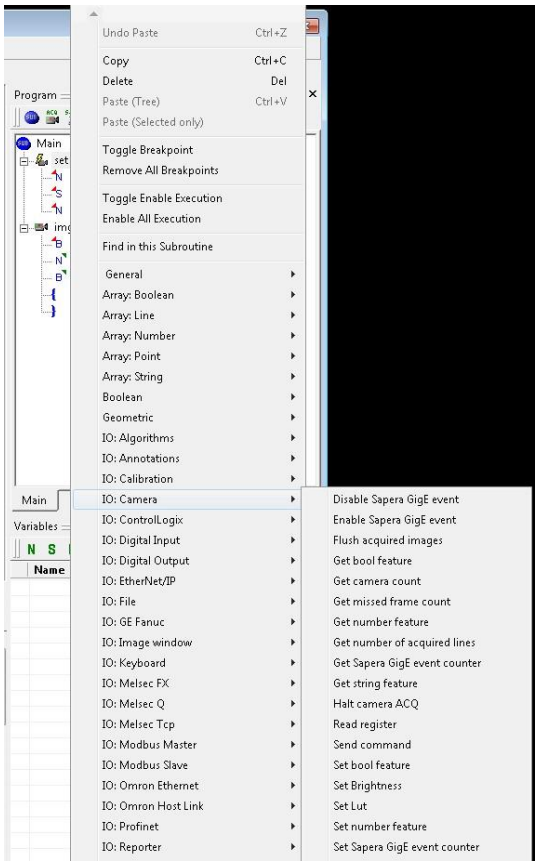
The comparison of node types in *.ini file and MvCameraNode.xlsx is shown below:

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 I0:Camera Support

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


Program
Main
set number featureA
camera index (0.00)
feature (Width)
value (2048.00)
imgA
update display (True)
acq time
acq status
Begin
End


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
IO: ControlLogix
IO: Digital Input
IO: Digital Output
IO: EtherNet/IP
IO: File
IO: GE Fanuc
IO: Image window
IO: Keyboard
IO: Melsec FX
IO: Melsec Q
IO: Melsec Tcp
IO: Modbus Master
IO: Modbus Slave
IO: Omron Ethernet
IO: Omron Host Link
IO: Profinet
IO: Reporter
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
Program
Main
Variables
Name