

Technical Note

Connecting to a Camera Link camera

Camera Link Connection:

Background and Purpose of this document:

We have been receiving questions about how to connect JAI cameras to a PC through the Camera Link interface. A variety of frame grabber boards/drivers exist in the market. Sometimes they conflict with each other and cause the camera to be unrecognized. To solve these issues, this document describes the basic settings needed to connect cameras to PCs through the Camera Link interface.

Setting Items:

The following items are setting items used to connect Camera Link with a PC. Some of these items are dependent on the user's PC environment.

A) PoCL

Some JAI cameras support PoCL.

- **Go Series:** Since the GO-5000x-PMCL is a PoCL camera, power should be supplied from the frame grabber. When power is supplied, the LED on the rear side of the camera turns green. If not, please check the frame grabber to see if it is equipped to supply power to camera. Note: GO-2400-PMCL and GO-5100-PMCL cameras also have PoCL capability, as well as the ability to accept power via a 4-pin connector. If PoCL is used, check the rear LED to see if it turns green. If not, verify that the frame grabber has PoCL capability.
- **Spark Series:** SP-xxxx-PMCL cameras support either PoCL or power supplied via the 12-pin Hirose connector. If the user wants to use PoCL, two PoCL cables should be used because a single PoCL connection is not enough for Spark Series performance requirements. If power is supplied, the power LED on the rear side of the camera turns green. If not, please check the frame grabber to see if it is equipped to supply power to camera. If the user cannot supply power through PoCL, the camera can be powered via a separate power supply connected to the 12-pin Hirose connector.
- **Cameras without PoCL:** Any Camera Link camera without PoCL capability can be powered via a separate power supply connected to the 12-pin Hirose connector.

B) JAI SDK and Control Tool

To be recognized by the JAI SDK and Control Tool, Camera Link must be enabled in the tool settings. As described in Figure 1, the setting of the "JAI GenCP Camera Link"->"Enabled" field should be "True."



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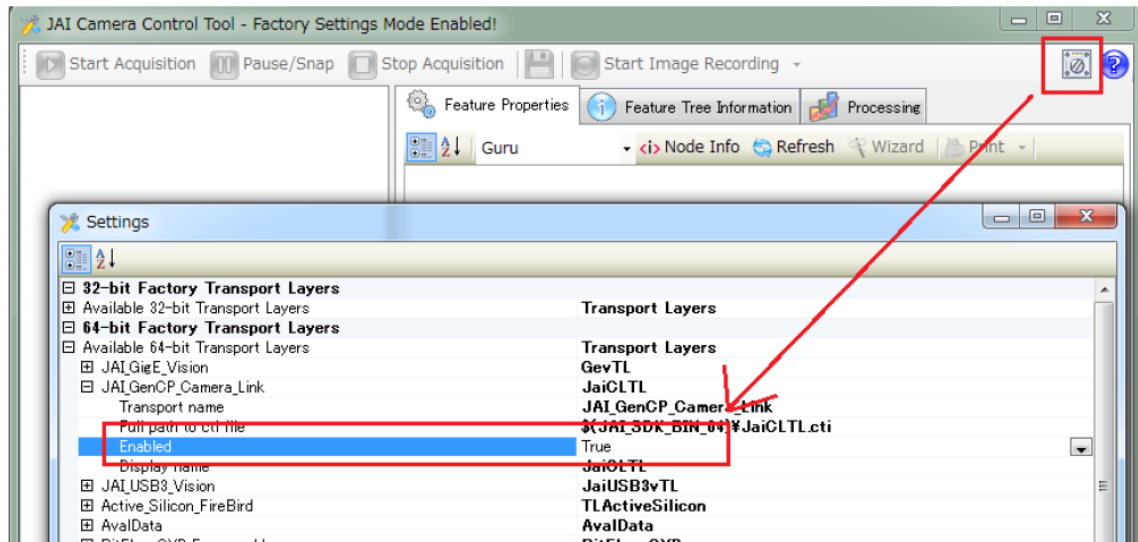


Figure 1.

C) Serial communication DLL

By registry editor (regedit), confirm the following setting (refer to Figure 2):
HKEY_LOCAL_MACHINE->SOFTWARE->CameraLink has "CLSERIALPATH".

Then, check the folder specified in the "Data" field of "CLSERIALPATH", to verify that the folder has "clser***.dll" and "clallserial.dll" files.

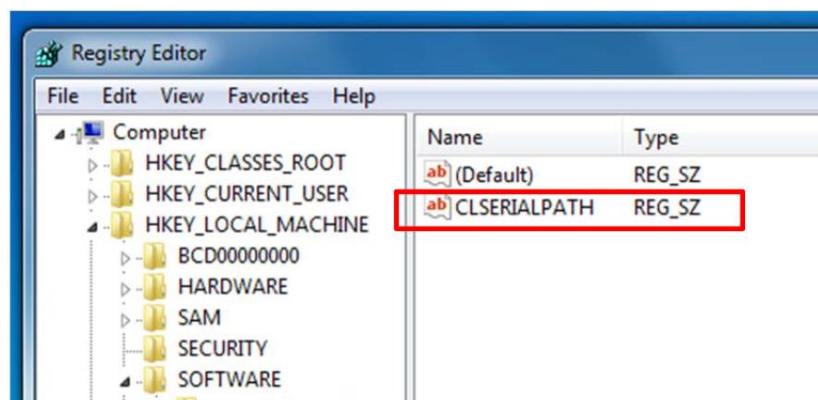


Figure 2.



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Note 1): clserxx.dll:

This file is for FG port communication. File name of the DLL file is clser***.dll. “***” is up to the frame grabber manufacturer. If the DLL file does not exist there, place the DLL file into the above folder. The DLL file is supplied by the frame grabber manufacturer.

Note 2): clallserial.dll:

This file is for COM port communication. This file is common for all frame grabber boards regardless of vendor. If the DLL file does not exist there, place the DLL file into the above folder. The DLL file is supplied by frame grabber manufacturer.

D) Environment Variable

Check the Windows Environment variable “Path”, to see whether the DLL folder described in section C) is included (refer to Figure 3). If not, please enter it there.

Note: If the first portion of the path is not end with a semicolon “;”, add one before writing the folder path.

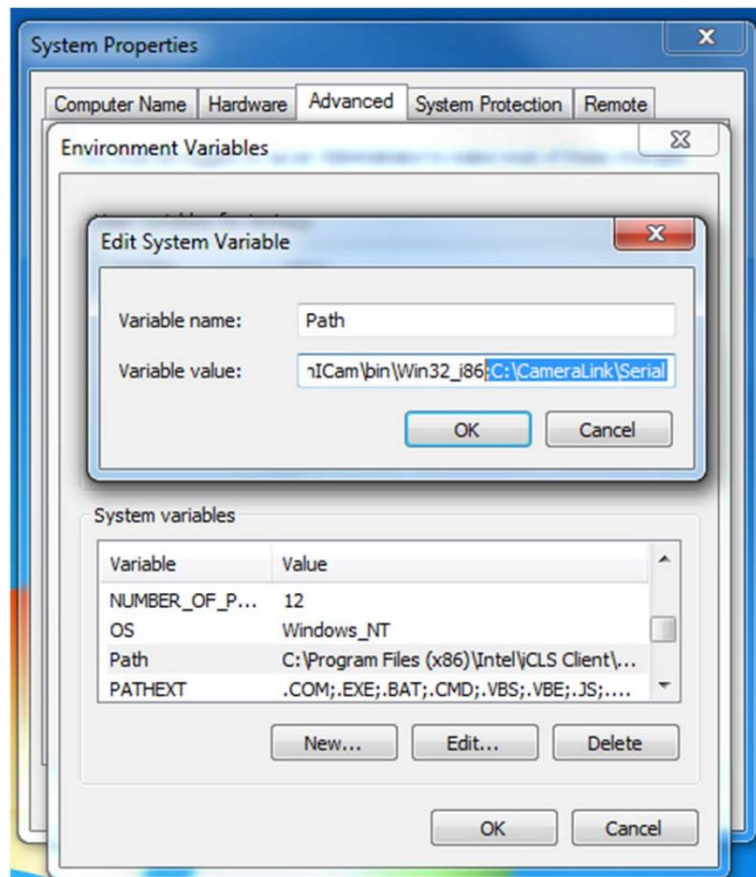


Figure 3.



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E) COM Port

To communicate using serial commands, a COM port should be allocated. With some frame grabbers, the allocated COM port is shown in the Device Manager.

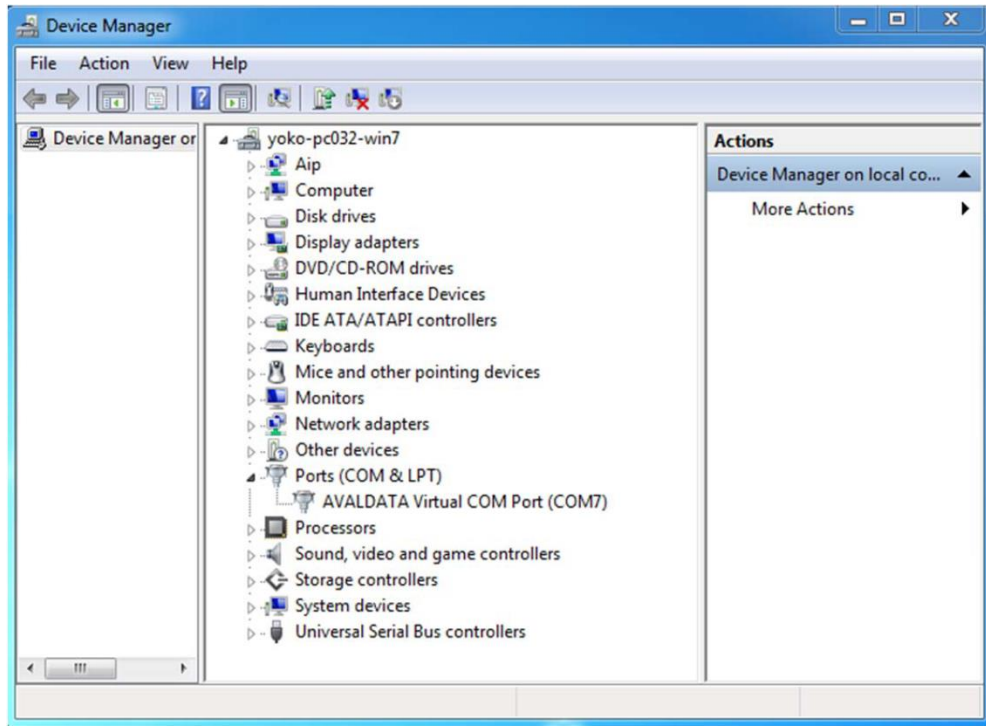


Figure 4.

Regarding how to allocate a COM port, please consult with the frame grabber manufacturer.

F) Recognition of Communication Port by JAI SDK and Control Tool:

If you have configured the JAI SDK and Control Tool as described in step B) above, the COM port can be recognized automatically. If the COM port is changed by actions taken in step E) above, you can manually search for a COM port.

1. Configure Camera Link Device

Right-click on the left side panel of the JAI SDK and Control Tool and select “Configure Camera Link Devices”.



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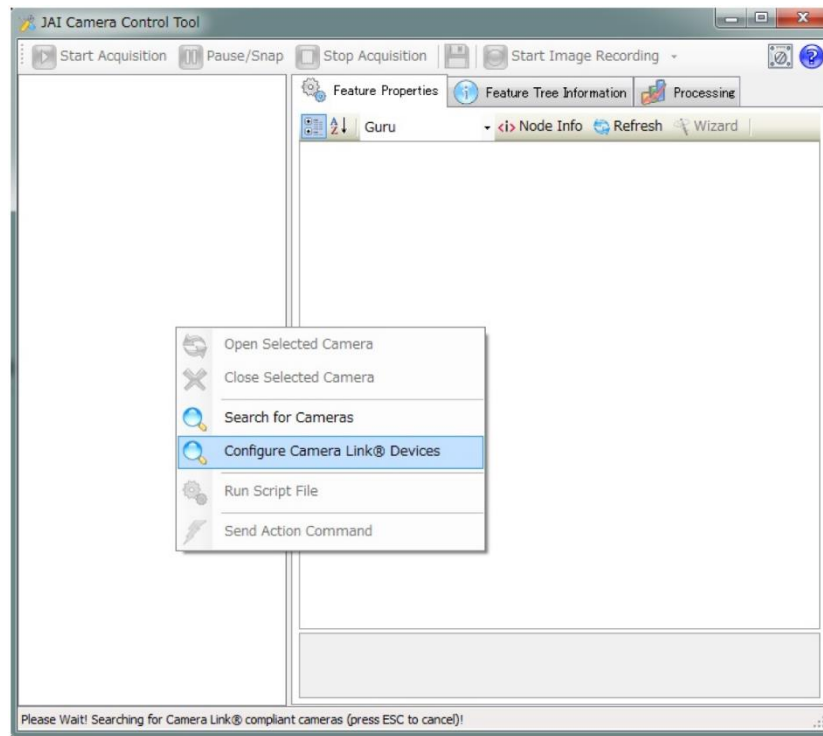


Figure 5.

2. Probe

Press the “Probe” button and search for COM ports on the PC. Recognized ports would be shown in “Connected Devices.” Ports can be toggled between “Use COM Ports” and “Use FG Ports.”

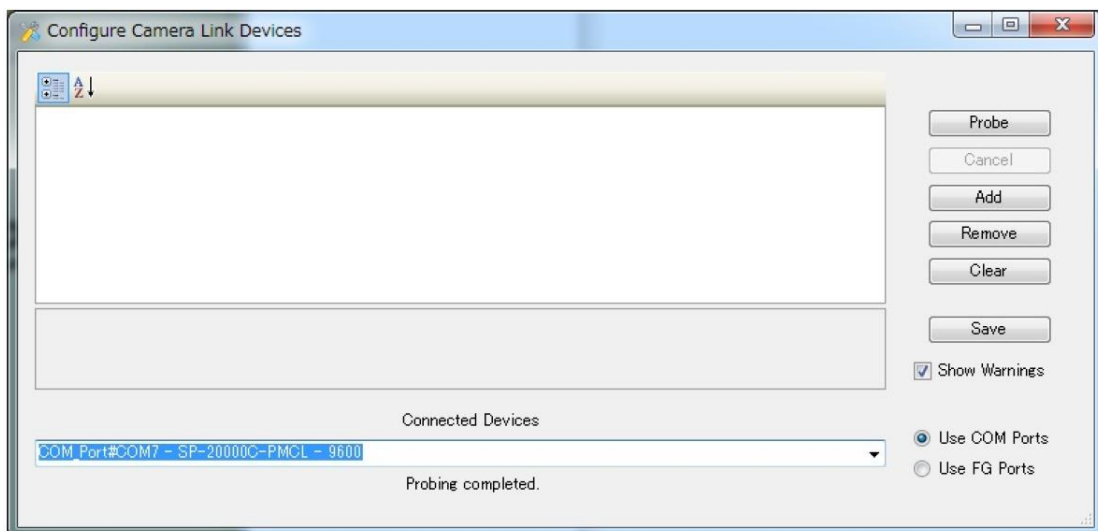


Figure 6.



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3. Add and Save

Press the “Add” button, then press the “Save” button.

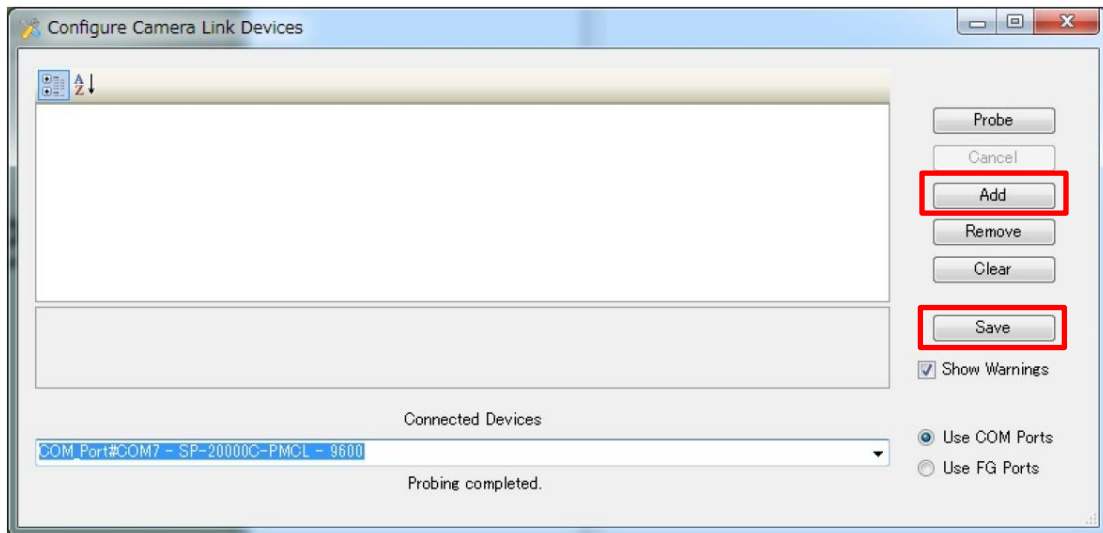


Figure 7.

4. Searching for Cameras

Select “Search for Cameras”, then the searching starts.

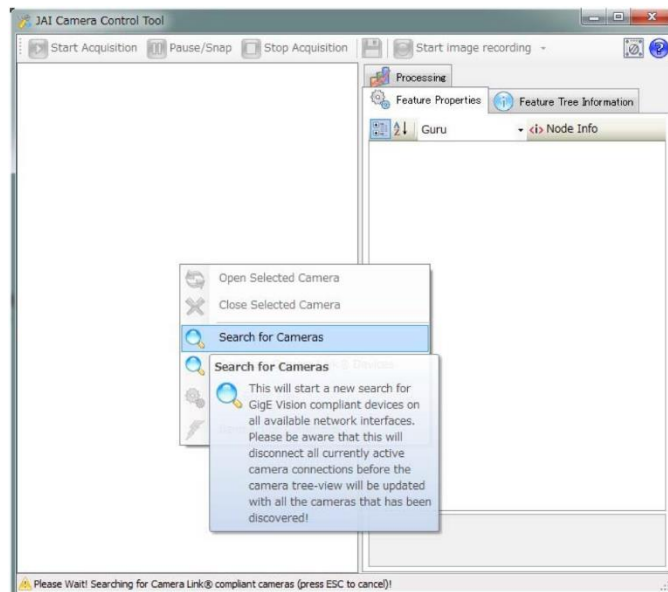


Figure 8.



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Then, cameras can be found as follows:

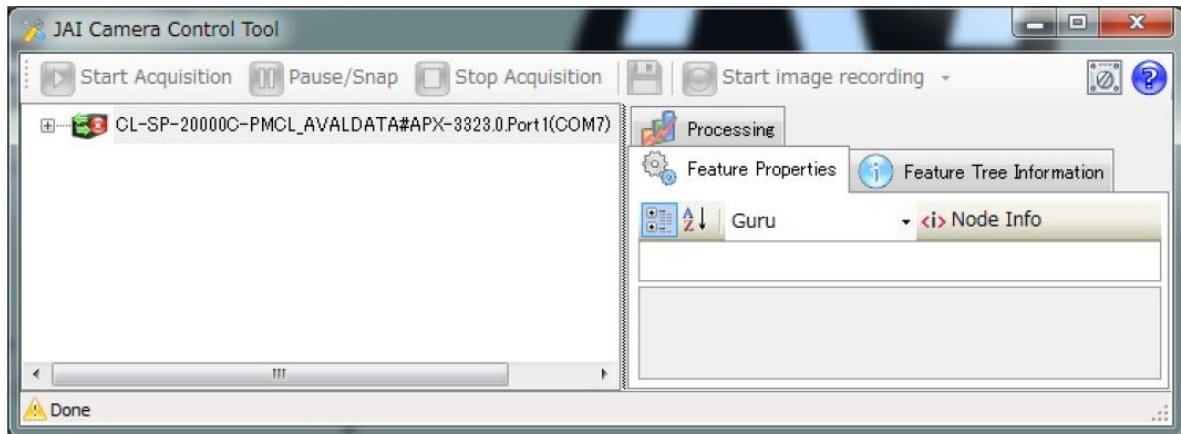


Figure 9.

G) Tips to find cameras quickly

JAI SDK and Control Tool is designed to search for all ports in connecting Camera Link cameras. As a result, connecting cameras takes a long time. To shorten this time, a COM port can be memorized in the JAI SDK and Control Tool and the searching function can be disabled (see below).

Note:

The camera name displayed in the top-left side of the Control Tool is also memorized when memorizing the COM port. For example, assume the Control Tool memorizes the COM port with a camera name of SP-5000M-PMCL. If the camera is subsequently swapped for an SP-20000M-PMCL, the name that is displayed in the Control Tool will still be SP-5000M-PMCL.

Actual control of the new camera should not be a problem. However, to avoid confusion, if the camera is changed to other cameras, reconnecting and re-memorizing are recommended.

[Method to disable probing - refer to Figure 10 on following page]

- 1) Open Settings by pressing top-right side button of JAI SDK Control Tool.
- 2) Set "False" to "Camera Link Transport Layer" -> "Automatically probe for Camera Link devices at startup".
- 3) Set "True" to "Camera Link Transport Layer" -> "Use Highest Baud rate for XML download from camera".
- 4) Press "Save and Close" button on bottom-right side of the Settings window.



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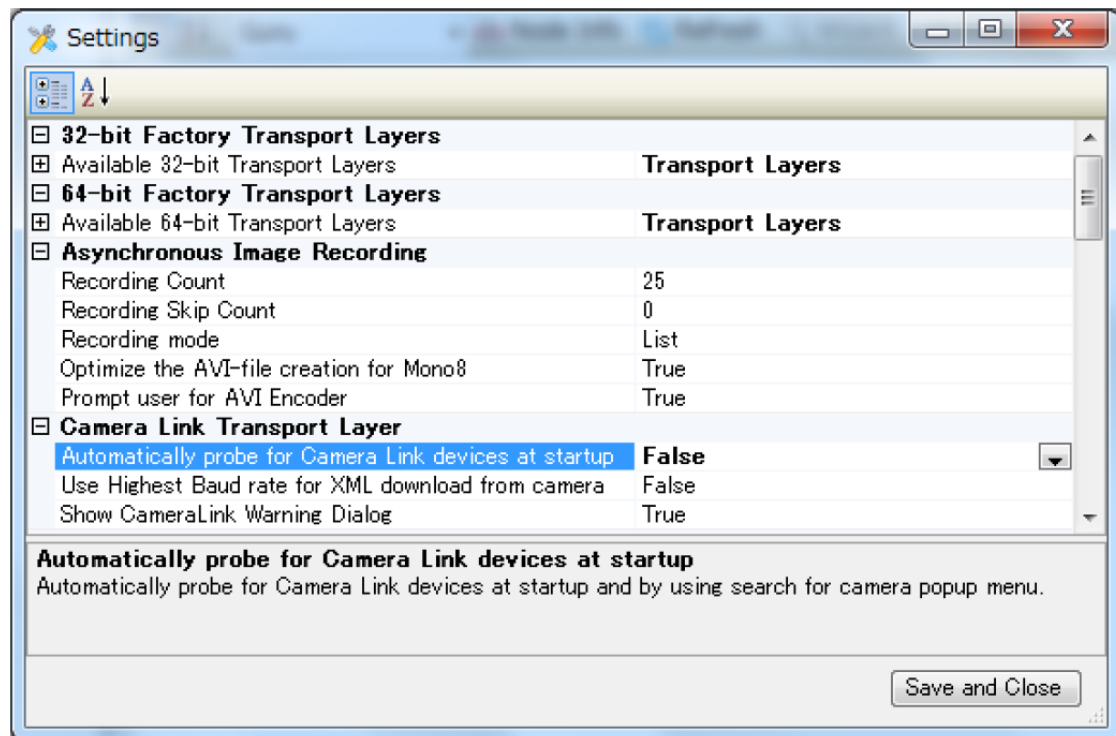


Figure 10.

End.

Revision History

Revision	Date	Changes
1	2015/9/11	New release
2	2016/6/6	Add page8 G) Tips to find cameras quickly