Rugged Machine Vision

Advanced Digital Machine Vision Cameras

illunis

Camera Control Application

Quick Start

Application Notes

Rev A

Introduction

The Camera Link specification details the camera communication interface using clallserial.dll.

This clallserial.dll communicates to the capture card specific clser***.dll's where *** is the capture card manufacturer unique identifier, per the Camera Link specification.

The illunis control app requires the clallserial.dll and installs it to the installation application folder. It also requires the registry to be properly configured and the capture specific dll's to be in the location specified in the registry.

Document Revision:

Revision	Date	Comments
4.0.3.3	1/30/2015	Re-write
5.0.1.1	2/2016	Update
A	11/2017	Update

Necessary Prerequisite Software

The user can check the status of these items in the Control Panel -> Programs, and Features listing. If necessary, the user must download and install the following prerequisites.

1. **.NET Framework 4.5** to be installed from:

   https://www.microsoft.com/en-us/download/details.aspx?id=30653

2. **Visual C++ 2013 Redistributable** from:

   https://www.microsoft.com/en-us/download/details.aspx?id=40784
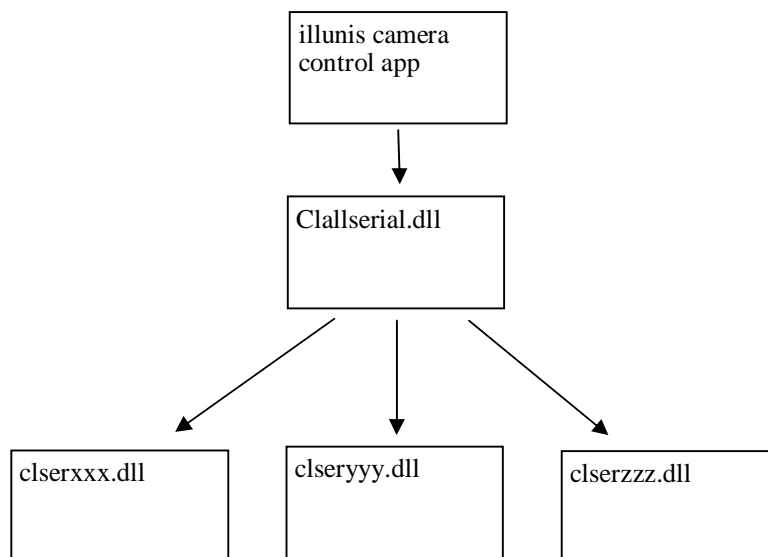
For Line Scan Control App

See the baud rate note on page 9

Per the Camera Link 1.1 Spec

All camera control applications connect to clallserial.dll, which dynamically load the DLL file(s) specific to the frame grabber(s) application references. It then routes all calls to the correct DLL file.

```
┌─────────────────┐
│ illunis camera  │
│ control app     │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Clallserial.dll │
│                 │
└─────────────────┘
    │    │    │
    ▼    ▼    ▼
```

clserxxx.dll	clseryyy.dll	clserzzz.dll

Clallserial.dll is required to be in the illunis control application executable folder. This is done by the illunis control application installer.

When clallserial.dll is loaded by the illunis control application, it looks at the Registry entry:
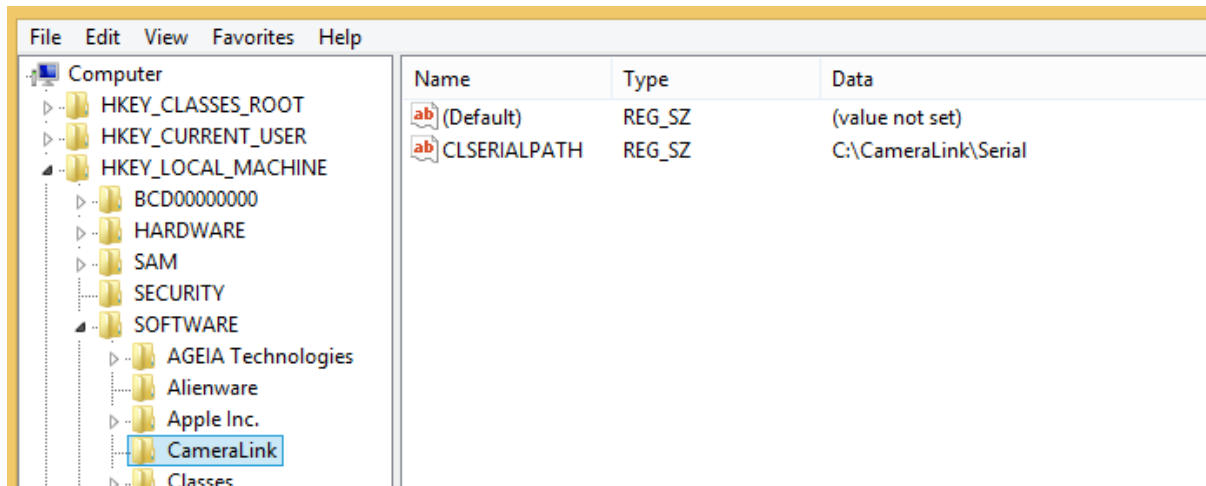
> HKEY_LOCAL_MACHINE\SOFTWARE\Cameralink CLSERIALPATH.

The location pointed to by CLSERIALPATH is typically C:\Cameralink\Serial, but could be any path that a capture card install might create. It is important to note that the capture card communication dll(s), clser***.dll must be at this path location. Clallserial.dll should NOT be in this location.

When the application is run, clallserial.dll dynamically loads from the application directory and queries the manufacturer name and port names individually. It returns a complete system-wide list of Camera Link serial ports to the application. The required manufacturer-specific DLL files are loaded, and clallserial.dll manages to pass the application calls to the appropriate DLL for the port specified by the application. If the user has more than one clser***.dll, the illunis control application will show the list to the user. This allows the user to select the port they would like to connect to. If there is only one clser***.dll the illunis control application will auto-matically connect to it.

Registry Setup

Typically, if the capture card communication dll is spec 1.1 compliant, the user will find this directory already created. Any capture card specific dll — named clserxxx.dll MUST be in this directory location in order for the illunis control app to communicate properly.

If the capture card communication dll is not spec 1.1 compliant, the illunis control application will not function.
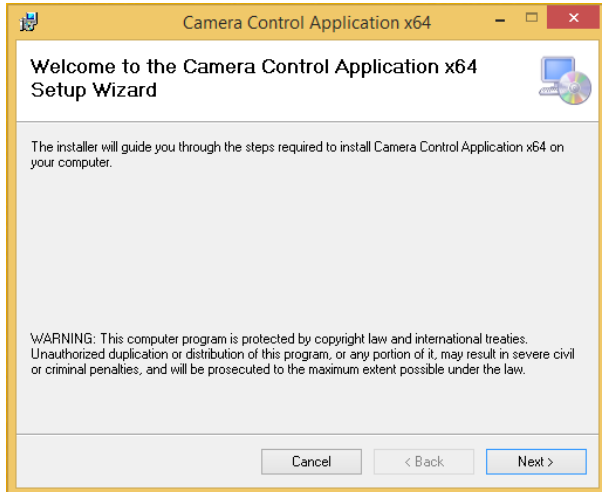
The illunis control app installs clallserial.dll for the appropriate operating system in the application folder. Depending on the application version, some documentation may be installed in the application folder as well.

If the registry entry above does not exist, create it as well as the directory C:\CameraLink\Serial

In either case—copy, paste, and clser***.dll files to C:\CameraLink\Serial
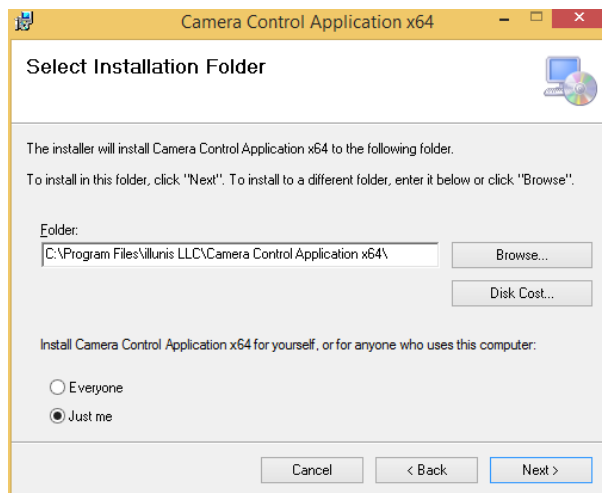
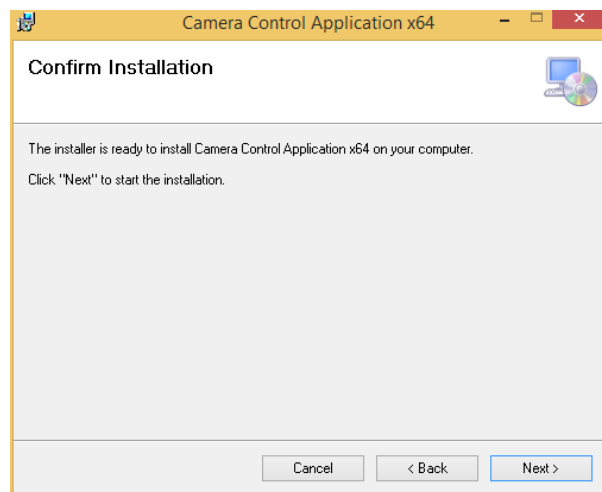# illunis GUI control program install and use.

Launch the installer,

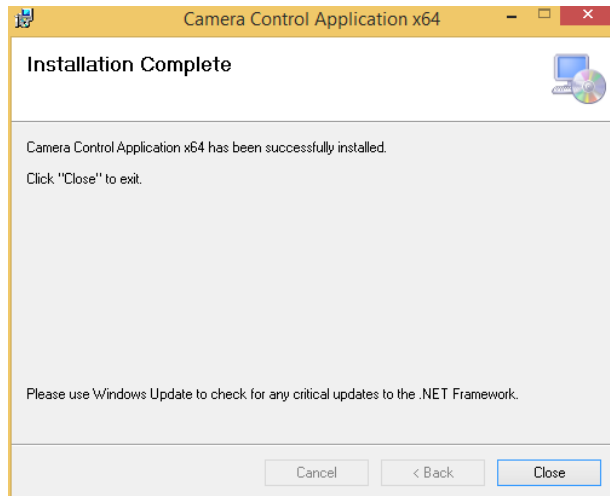This will guide the user through the installation...

Select the installation folder...

Confirm...

illunis GUI control program install continued..

Installation Complete

Camera Control Application x64 has been successfully installed.

Click "Close" to exit.

Please use Windows Update to check for any critical updates to the .NET Framework.

Install complete…

Note: A shortcut to the GUI program will be placed on the desktop.

Attach and power the camera. Run the program.

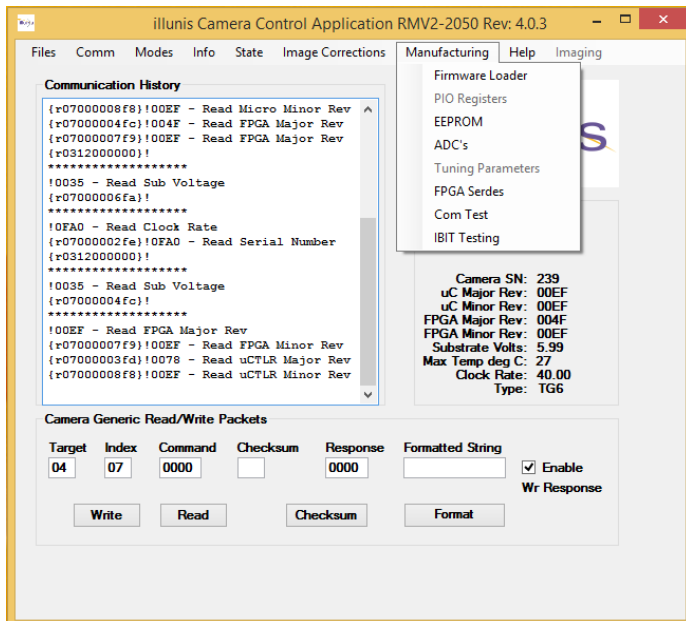It will connect to the camera through the Camera Link DLL clallserial.dll.

If there are multiple clserxxx.dll's for multiple cards installed, the user will get the choice of ports to connect to below.

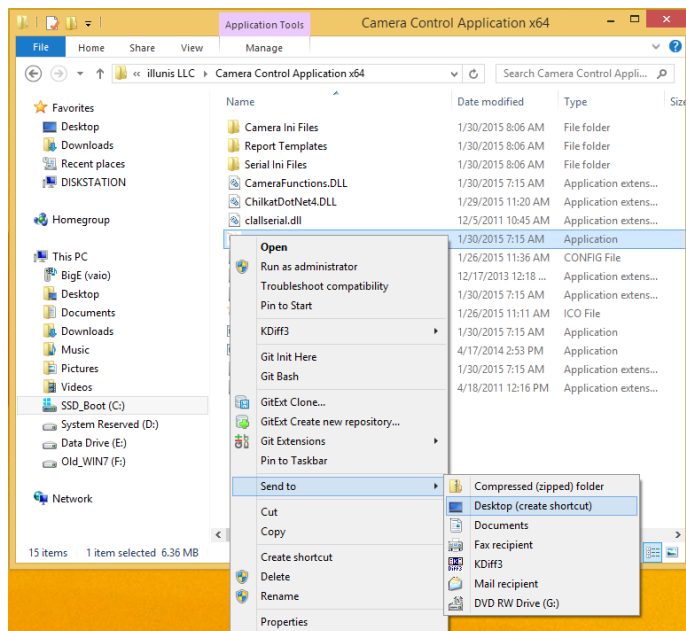If the user has a single board and clserxxx.dll, the application will simply connect.

Choose the Camera Link Port

Port	Mfr	Port ID
0	BitFlow, Inc.	Port #0
1	ial_0	Xcelera-CL_LX1_1_Serial_0

Port 0   Port 1

illunis GUI control program continued…

Disabled Menus

By default, sensitive menu items are disabled to prevent inadvertent changes to the camera state. To enable them, a new shortcut has to be created on the desktop.

First, delete the desktop shortcut created by the installer.
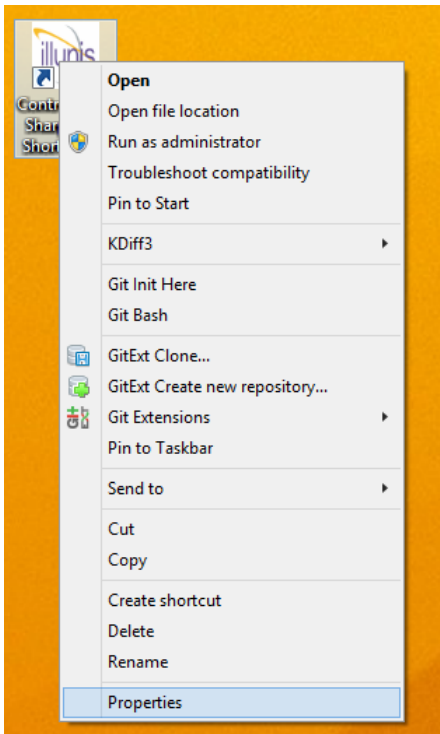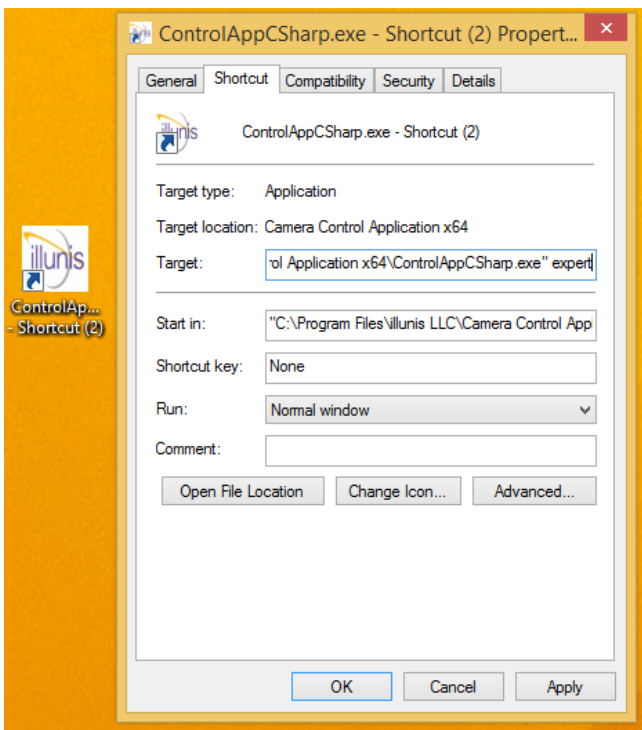

Create a new shortcut

Navigate to the program install directory and right click on the file with the illunis icon and extension .exe. Choose -> Send to -> Desktop. This creates a new desktop shortcut icon.

Desktop Shortcut continued…

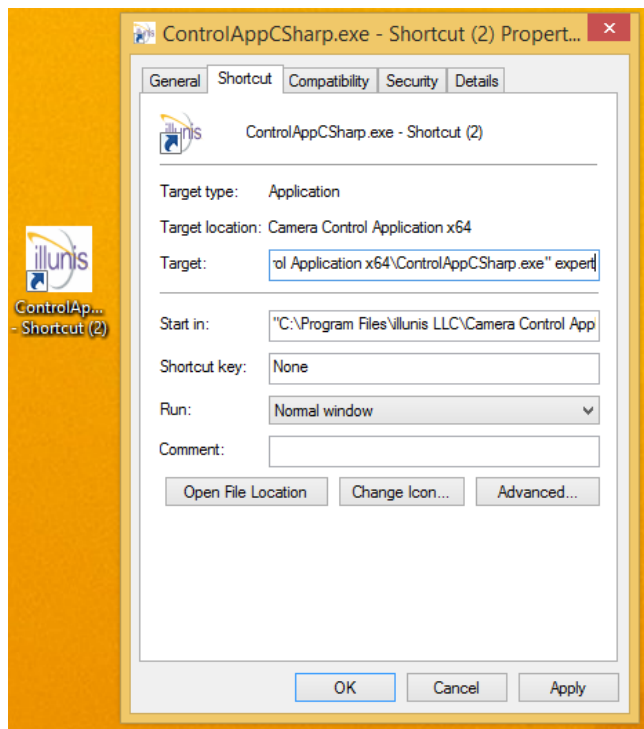Right click on the newly created desktop icon and select Properties.

Add a space and the word **expert** after the close quote on the Target: line of the dialog box: .exe" expert

Choose OK.
When the program is launched, the menus will be enabled.

illunis GUI control program continued…

Additional arguments can be added after **expert** by adding a space and typing the other arguments.

The Line Scan Camera is 115200 baud by default.

Add this to the arguments.

baud=115200

For example - the end of the Target line would be:

.exe" expert baud=115200

General Comments:

The control application is designed to allow the user to communicate with the camera until the user application takes over these functions. All buttons and sliders show the command that is executed in the application main window. Also, in the main window, there is a generic read and write section allowing the user to send any command that can be found in the manual to the camera and see its response.

NOTE: If the user changes a camera mode, the user will have to make the corresponding change in the capture environment as they are independent.