SILICONSOFTWARE

Using Virtual COM Ports

Camera Link Product Family

User Guide

Imprint

Silicon Software GmbH
Steubenstraße 46
68163 Mannheim, Germany
Tel.: +49 (0) 621 789507 0
Fax: +49 (0) 621 789507 10

Document Version: 3.0
Document Language: en (US)

Last Change: March 2014

SILICONSOFTWARE

Content

Part One – Quick Start 5

You may find this document useful if 5

Automatic Setup of Virtual COM Ports 5

Using the Virtual COM Ports 6

Display of Virtual COM Ports in the Windows Device Manager 7

Changing Connection Settings 8

Part Two – Manual 10

1 Introduction 10

1.1 Camera Link Serial Interface 10

1.2 The COM Interface 11

1.3 Components of the Silicon Software Camera Configuration Interface 12

1.4 ClSerCOM Wrapper Convenience Features 13

2 Installing the ClSerCOM Wrapper 13

2.1 Using the Installation Wizard 13

2.2 Files of the Installation Package 17

3 Automatic Connection (COMWrapperAutorun.exe) 18

3.1 Functionality of COMWrapperAutorun.exe 18

3.2 Default COM Port Numbers 20

4 Connecting Manually (ClSerCOM Wrapper) 21

4.1 Start Window 21

4.2 Main Menu 22

4.3 Installing Virtual COM Ports 23

4.4 Setting the Port Parameters 24

4.5 Connecting the Camera Link Serial Port to the Virtual COM Port 26

4.5.1 Display of Running Instances in the Taskbar 27
4.5.2 Display of Virtual COM Ports in the Windows Device Manager 29
4.6 Echo 29
4.7 Starting ClSerCOM Wrapper Using Autostart Arguments 31
5 Autorun Configuration File 33
5.1 Content and Syntax 34
5.2 Editing the Configuration File 36
5.3 Default Values 37
5.3.1 Default COM Port Numbers 37
5.3.2 Default Connection Parameters 37
5.4 ClSerCOM Wrapper and Configuration File 38
6 Adaptation to Existing System Environment 39

Part One – Quick Start

You may find this document useful if …

- You want to program applications that offer configuration options for Camera Link cameras, and
- You prefere using a COM-based serial interface (instead of using the Camera Link serial interface directly)

Automatic Setup of Virtual COM Ports

When working with Runtime Version 5.2.2 or higher, virtual COM ports are set up automatically:

- after installation of the Runtime, and
- at each system start.

What happens after the installation / on each system start is the following:

- The system sets up as many virtual COM ports as there are camera ports on the frame grabber(s)
- It connects the virtual COM ports with the camera ports (via frame grabber), using default values for the connection (baud rate etc.) or values you predefined in a configuration file, see section Autorun Configuration File)

Thus, directly after system start, you have as many virtual COM ports available as you need. You can use these ports to connect your software to the frame grabber, i.e., the camera.

	**Administrator access rights required** Log on as administrator, since you need administrator access rights for installing virtual COM ports. If you are not logged on as administrator, you will get an according promt.

Using the Virtual COM Ports

To use the virtual COM ports:

1. Start your system (with administrator access rights).
2. Install the Silicon Software Runtime (if not installed yet).

All virtual COM ports are now displayed in the Windows task bar:

For each camera port on the frame grabber(s) of your system, one connected virtual COM port is available.

The default connection values are:

- baudrate=9600
- parity=n
- databit=8
- stopbit=1

Most of the Silicon Software Camera Link frame grabbers have two external Camera Link ports (A and B) for connecting one camera (Medium/Full) or two cameras (Base). The application uses the following COM port numbers as defaults when installing virtual COM ports and connecting them to the external Camera Link ports of the frame grabber(s):

COM Port Number	Frame Grabber	Camera Link Port of the Frame Grabber	Internal serial port (Clser port) number
10	Frame Grabber No. 1	Port A	0
11	Frame Grabber No. 1	Port B	1
12	Frame Grabber No. 2	Port A	2
13	Frame Grabber No. 2	Port B	3
14	Frame Grabber No. 3	Port A	4
15	Frame Grabber No. 3	Port B	5
etc.	etc.	etc.	etc.

Note

If **one/some of these** default COM port numbers are already in use within your system, you will get an error message. In this case, you have to install virtual COM ports manually, using free port numbers (see section Connecting Manually (ClSerCOM Wrapper).

Display of Virtual COM Ports in the Windows Device Manager

The installed virtual COM Ports are displayed in the device manager.

The following display informs that two virtual COM ports are available:

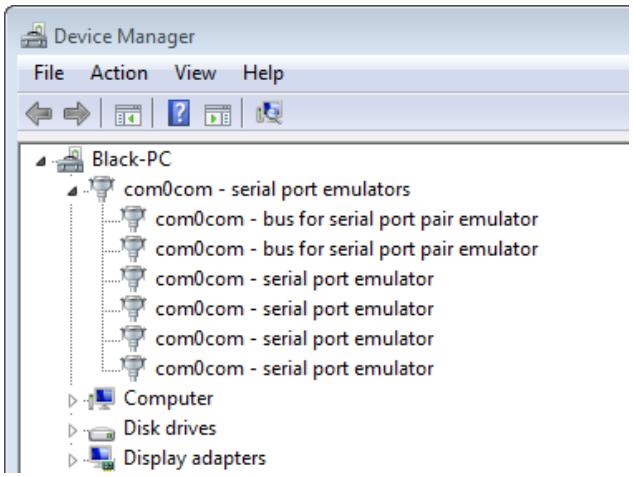


Figure 1: Virtual COM ports as displayed in the Windows Device Manager

Each virtual COM port is displayed with two serial port emulator entries (since the virtual COM port is actually a pair of ports, consisting of a Clser and a COM port). In addition, for each virtual COM port one bus is displayed (bus between Clser and COM port components).

Changing Connection Settings

If you want to change connection settings:

1. Place the mouse pointer on the COM port symbol in the Windows task bar. The mouse over informs about the connected ports, the frame grabber that provides the Camera Link port for this connection, and the port settings (baudrate, parity, databit, stopbit)

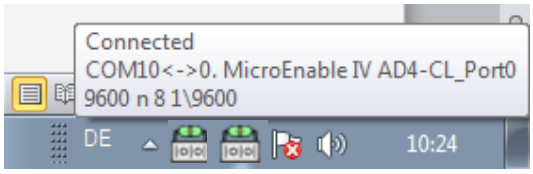
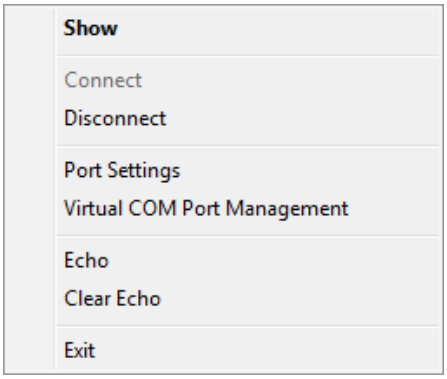


Figure 2: Mouse over information on prticular connection

1. Right-click on the COM port symbol in the Windows task bar.
   A menu displaying all available options appears:



Show:

Opens a GUI window for adapting port settings.

Connect / Disconnect:

Connect to/disconnect from the Camera Port

Port Settings:

Set the parameters for Com port and Clser port (see section Setting the Port Parameters).

Virtual COM Port Management:

Install/uninstall virtual COM ports manually (see section Installing Virtual COM Ports)

	**Connection Protection** When clicking the **Show** button or double-clicking on a COM port symbol, a GUI window for configuring the individual virtual COM port connection opens. However, to avoid accidental disconnection, the connection is independent of this program window: If you close the program window by clicking the close button  , the port stays connected.

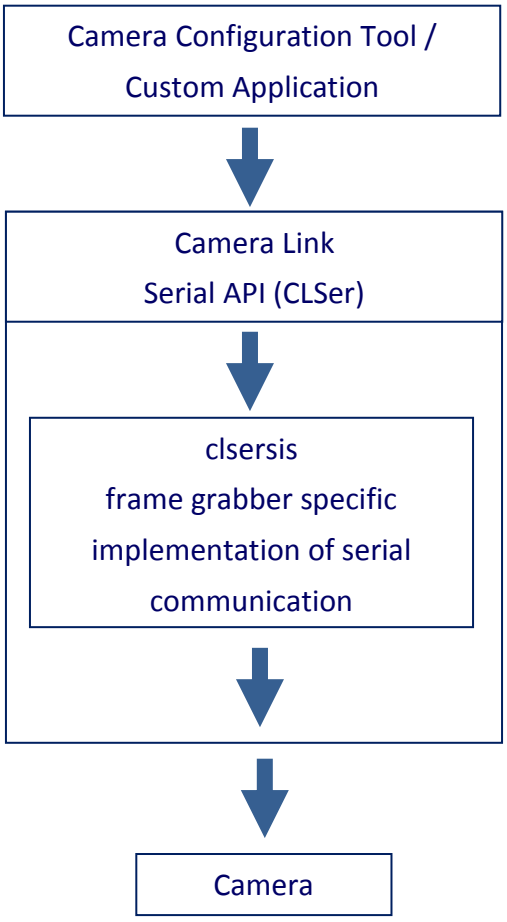
Part Two – Manual

1 Introduction

1.1 Camera Link Serial Interface

The Camera Link standard defines a serial interface for communication between the camera and an external Software. The external software may be, for example, a camera configuration tool provided by the camera manufacturer, or a custom machine vision application. The serial interface (Clser) allows to configure the camera.

When using a Silicon Software frame grabber, the communication between software and camera runs through the frame grabber. The frame grabber offers the standard serial application programming interface defined by the Camera Link standard:

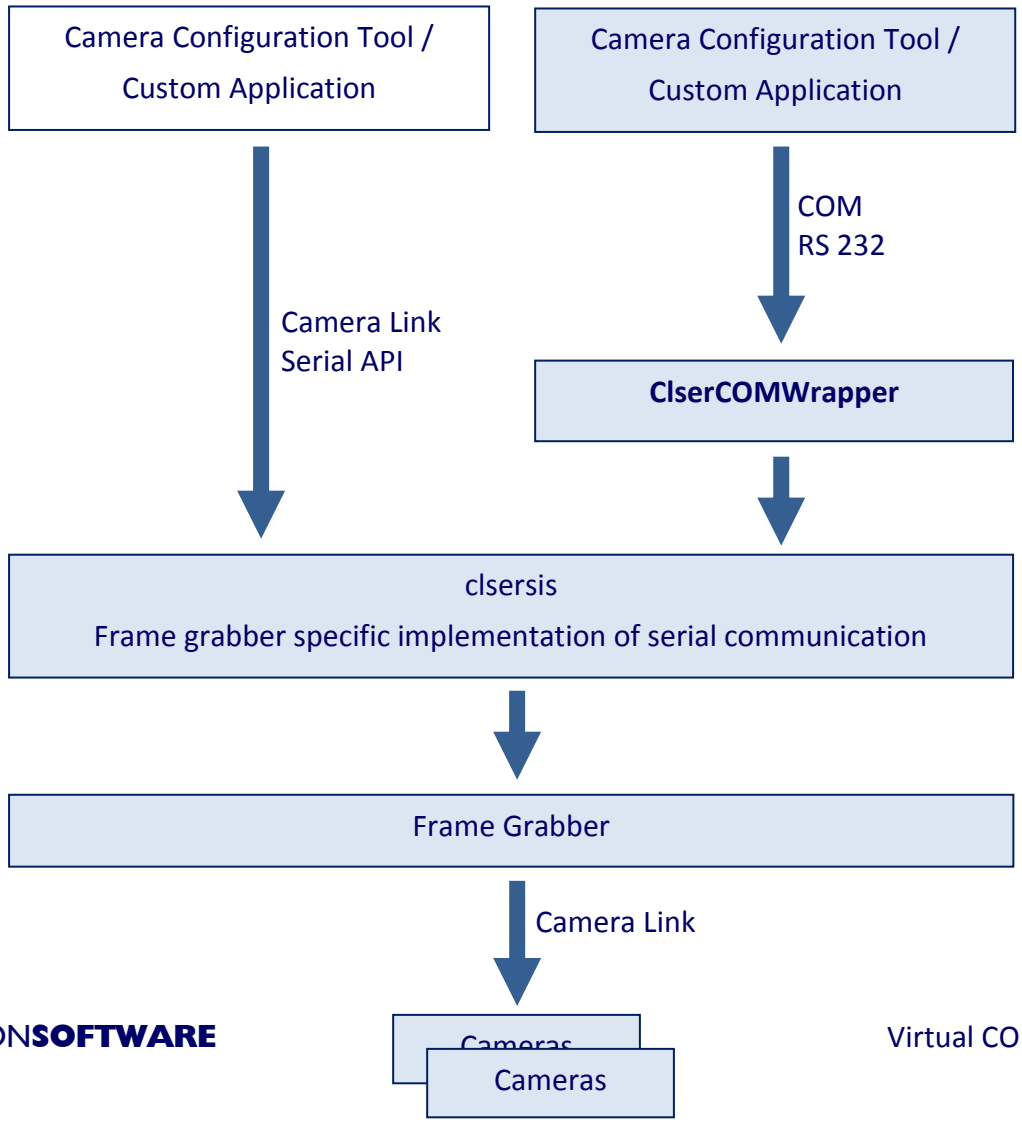


Standard interface

Each Camera Link compatible software with camera configuration options can be used to configure a camera that is connected to a Silicon Software Camera Link frame grabber.

1.2 The COM Interface

Many software developers prefer to use a traditional COM interface to communicate with the camera. For this purpose, the Silicon Software runtime offers a module that functions as an adapter between the software and the standard Camera Link serial interface of the frame grabber. This module provides virtual COM ports and is called ***ClSerCOM Wrapper***.



1.3 Components of the Silicon Software Camera Configuration Interface

The serial API of the Silicon Software frame grabbers for configuration of Camera Link based cameras (via COM interface or standard Camera Link serial interface Clser) consists of these components:

- **Clsersis.dll**
  An implementation of the Camera Link serial (Clser) application programming interface as defined in the Camera Link specification.

- **ClSerCOMWrapper.exe**
  Application: Allows communicating with the camera using the standard serial interface of the PC (COM) instead of directly using the Camera Link serial API of the frame grabber.

  SisoVirtualCOMPort.dll
  Module of ClSerCOMWrapper: Allows installing and uninstalling virtual COM ports by starting the null modem emulator (com0com) client application.

- **COMWrapperAutorun.exe**
  One-click application: Using the COMWrapperAutorun.exe, you can start via one mouse click
  - ➔ automatic setup of all required virtual COM ports
  - ➔ automatic setting of connection parameters
  - ➔ automatic connection between the virtual COM port(s) and the Clser port(s) of the frame grabber

Autostart

If you add the COMWrapperAutorun.exe to the Windows Autostart folder, COMWrapperAutorun.exe is automatically started on each system start.

1.4 ClSerCOM Wrapper Convenience Features

The new version of the ClSerCOM Wrapper offers all the functions of its predecessor.

Several features add to the convenience of the tool:

- **Graphical user interface:** The implementation of a graphical user interface makes the ClSerCOM Wrapper easy and intuitive to work with.
- **SisoVirtualComPort.dll** A new module, the *SisoVirtualComPort.dll*, has been integrated. It allows you to use the null modem emulator (com0com) client application for installing and uninstalling virtual COM ports. You can either
  - configure the system so that the virtual COM ports are installed automatically on system start, or
  - install and uninstall the COM ports manually using the options of the ClSerCOM Wrapper's graphical user interface.

2 Installing the ClSerCOM Wrapper

2.1 Using the Installation Wizard

The ClSerCOM Wrapper comes as part of the runtime and is installed together with the runtime.

If you want to use the newest ClSerCOM Wrapper together with an older runtime version, you have to install the ClSerCOM Wrapper manually as described below.

To install the ClSerCOM Wrapper:

1. Start the setup program ***SetupClSerCOMWrapper_Win64.exe***.
2. Select your preferred installation language.
3. Confirm the *Welcome* window with **Next**.
   Now, you get a list of all Silicon Software Runtime versions you have installed on your system.
4. If you want to install the ClSerCOM Wrapper into the installation of a particular runtime version on the system, select this installation from the list.

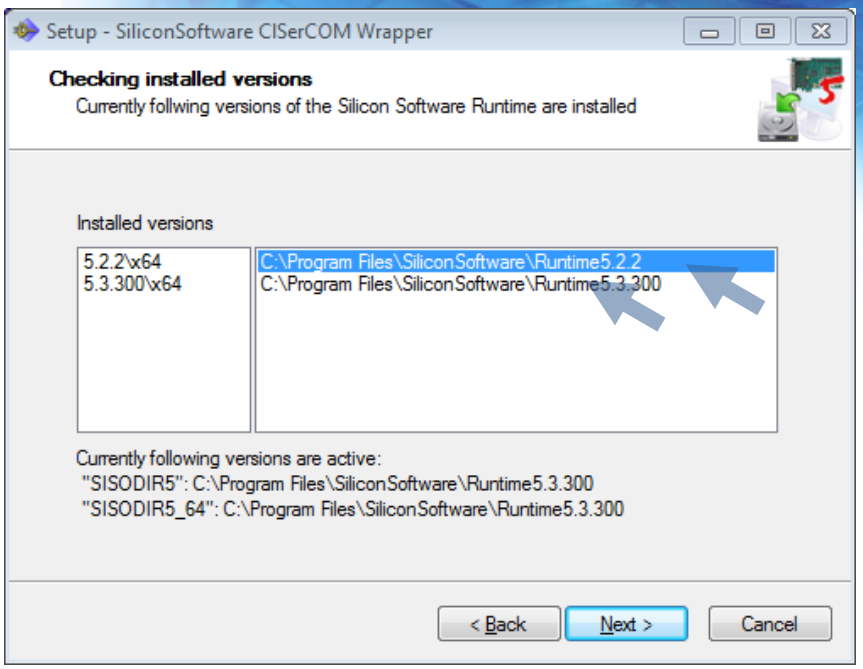


Figure 4: Selecting the runtime version on your system where you want to install the CISerCOM Wrapper

5. Click **Next**.
6. Enter the installation path.

   If you selected an individual runtime version before, the according installation path is already displayed.

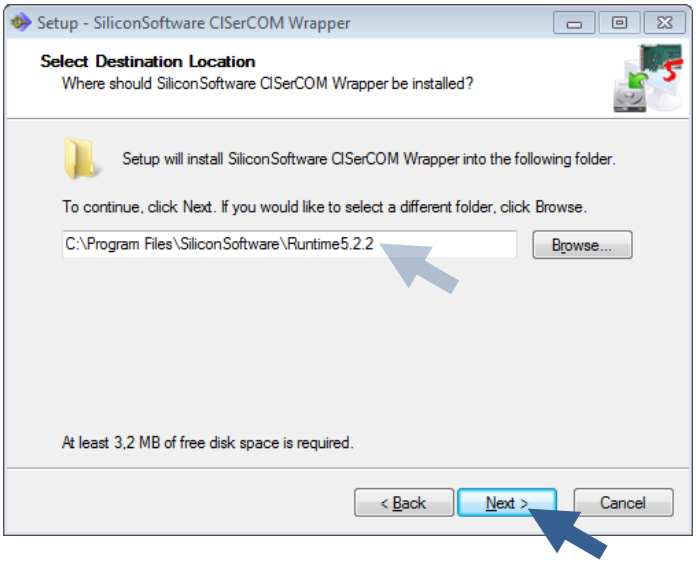


Figure 5: Specifying the Installation target path

7. Click **Next**.
   The following dialog opens:

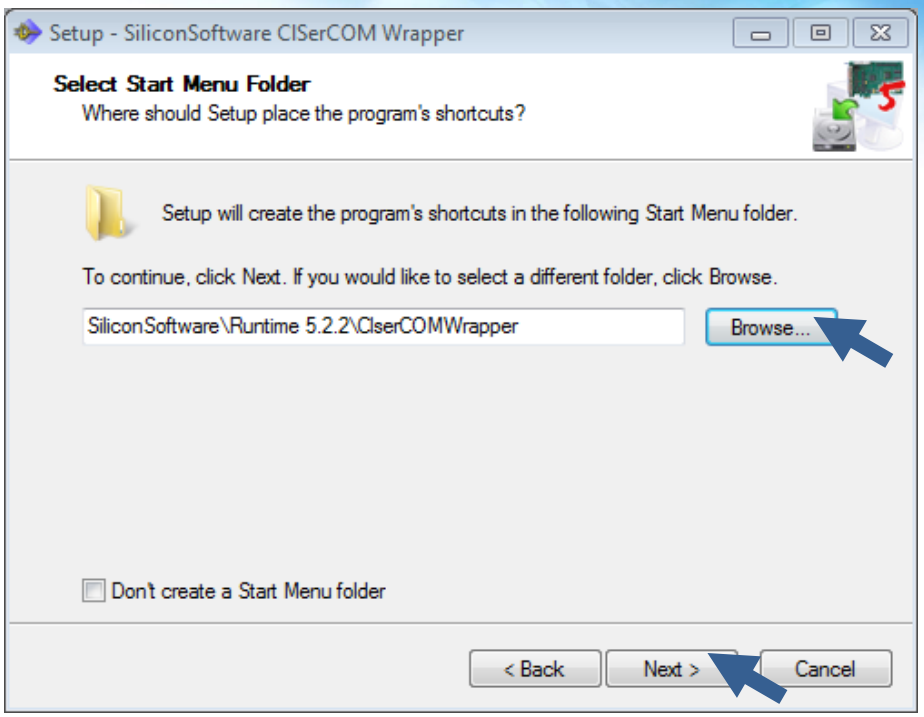


Figure 6: Selecting the Windows Start Menu group

8. Use the **Browse…** button to select where in the Windows start menu you want to find the program shortcuts.

	Don't forget Make sure you specify the Windows start menu group you want to use.

9. Click **Next**.
   In the last dialog, you can select these options:
   - Option „Always run COMWrapperAutorun.exe at system start“: COMWrapperAutorun.exe is added to the Windows Autostart list and will be started every time you start your system.
   - Option “Run COMWrapperAutorun.exe after install immediately”: COMWrapperAutorun.exe is started immediately after installation.

Important

We recommend to select the „Always run COMWrapperAutorun.exe at system start“ option. If COMWrapperAutorun.exe is run at system start, you can use the convenience options of the program (like automatic setup of virtual COM ports and automatic connection of the virtual COM ports to the frame grabber’s serial interfaces) most beneficially.

For detailed information on *COMWrapperAutorun.exe*, see section Functionality of COMWrapperAutorun.exe.

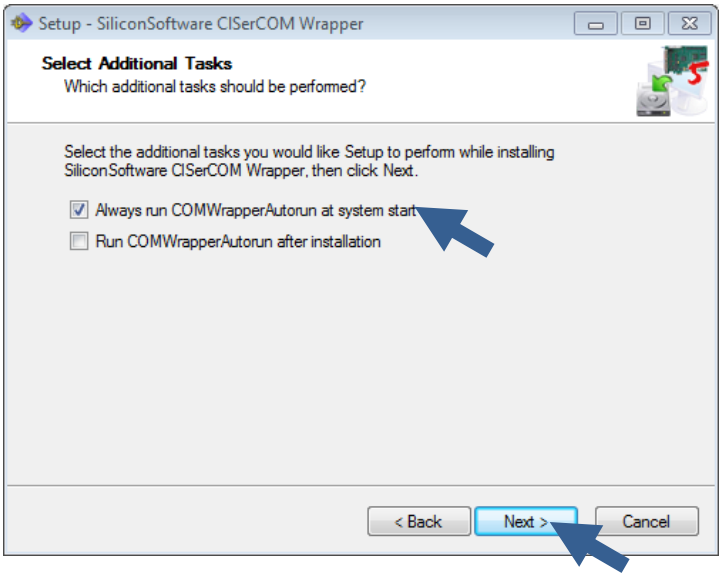


Figure 7: Adding the COMWrapperAutorun.exe to the Windows Autostart folder

10. Select the options you want.
11. Click **Next**.

The following dialog displays your installation settings:

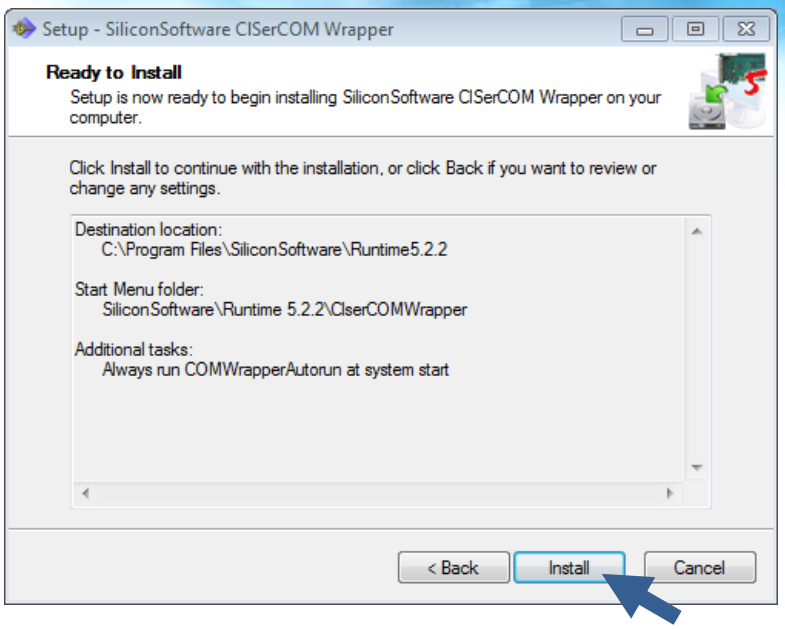


Figure 8: Display of main installation settings

12. Click **Install** to start the installation.

2.2 Files of the Installation Package

The installation package of the ClSerCOM Wrapper contains the following files:

File Name	File Description
ClserCOMWrapper.exe	Main program
SisoVirtualComPort.dll	Gets started by main program. Tool for managing virtual COM ports.
COMWrapperAutorun.exe	One-click application that automatically ▪ installs virtual COM ports ▪ sets connection parameters, and ▪ connects the Camera Link serial port of the frame grabber to the virtual COM port.

3 Automatic Connection (COMWrapperAutorun.exe)

You can use an automatic setup of virtual COM ports and automatic connection of these ports to the frame grabber, i.e., the camera. The tool that helps you do this is the COMWrapperAutorun.exe. COMWrapperAutorun.exe is a small helper program that uses the module SisoVirtualComPort.dll to automate

- installing virtual COM ports and
- connecting the ports to the frame grabber's Camera Link camera ports.

3.1 Functionality of COMWrapperAutorun.exe

The COMWrapperAutorun application automatically

- detects the total number of Camera Link serial interfaces (Clser ports) available in the system
- detects the total number of all virtual COM ports available in the system
- if there are less virtual COM ports than Clser ports: Installs virtual COM ports until there are as many virtual COM ports as there are Clser ports
- Reads the configuration file *COMWrapperConfig.ini* (a file containing connection-related data, such as the names of the particular ports that are to be connected to each other, the baudrate for each connection, etc.; for details, see section Autorun Configuration File)
    - If there is no configuration file *COMWrapperConfig.ini*, it automatically creates one, inserting default values (for details, see section Autorun Configuration File)
- creates autostart arguments for all required connections according to the data in the configuration file (for each connection, one instance of the ClSerCOM Wrapper will be started)
- starts according number of instances of the ClSerCOM Wrapper, using the autostart arguments -COMx –y –<COM Parameter> it just created in accordance with the data in the configuration file
- triggers each ClSerCOM Wrapper instance to immediately connect its virtual COM port „x" to its Clser port „y"

Thus, directly after system start, you have as many virtual COM ports available as you need. You can use these ports to connect your software to the frame grabber, i.e., the camera.

The opened ClSerCOM Wrapper instances are displayed in the Windows task bar:

The color of the COM port symbols informs you about the connection status:

Connected: 

Not connected: 

For details on how you can use these symbols, see section Display of Running Instances in the Taskbar.

	Administrator access rights required You need administrator access rights for all operations related to virtual COM ports (installing, uninstalling, etc.). The COMWrapperAutorun.exe installs virtual COM ports. 1. If you get an error message from the com0com component: Restart the program as administrator and retry.

	Tip When installing the ClSerCOMWrapper together with the Silicon Software runtime, or if you enable the according option when installing the ClSerCOMWrapper seperately, the COMWrapperAutorun application is started at each start of your system (see section Using the Installation Wizard).

3.2 Default COM Port Numbers

Most of the Silicon Software Camera Link frame grabbers have two external Camera Link ports (A and B) for connecting one camera (Medium/Full) or two cameras (Base).

The COMWrapperAutorun application uses the following COM port numbers as defaults when installing virtual COM ports and connecting them to the external Camera Link ports of the frame grabber(s):

COM Port Number	Frame Grabber	Camera Link Port of the Frame Grabber	Internal serial port (Clser port) number
10	Frame Grabber No. 1	Port A	0
11	Frame Grabber No. 1	Port B	1
12	Frame Grabber No. 2	Port A	2
13	Frame Grabber No. 2	Port B	3
14	Frame Grabber No. 3	Port A	4
15	Frame Grabber No. 3	Port B	5
etc.	etc.	etc.	etc.

If these default COM port numbers are already in use within your system: You will get an error message as soon as the COMWrapperAutorun application tries to install a virtual port using an occupied port number.

In this case, you have to install virtual COM ports manually, using free port numbers. You do this by using the ClSerCOM Wrapper application, see section Connecting Manually (ClSerCOM Wrapper).

4 Connecting Manually (ClSerCOM Wrapper)

4.1 Start Window

1. Start the ClSerCOM Wrapper.

The start window of the graphical user interface looks like this:

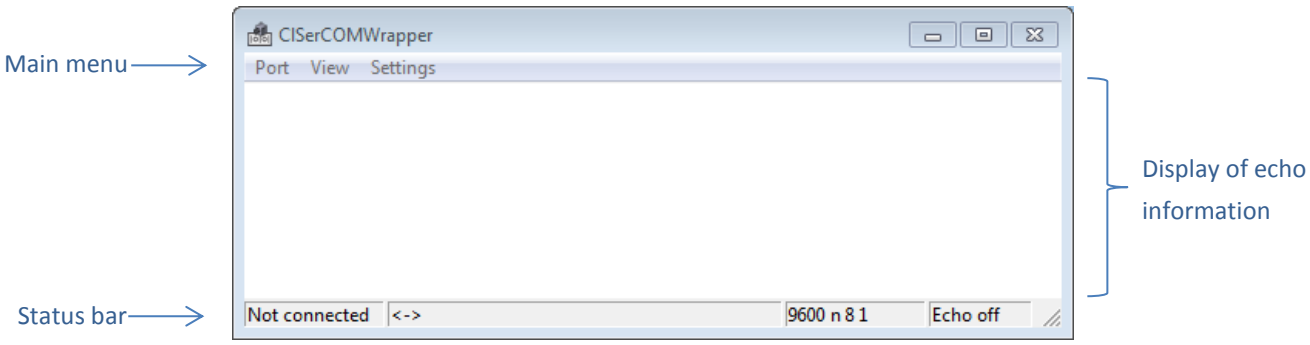
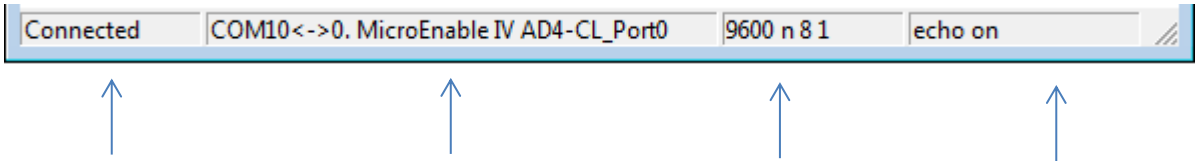


Figure 9: Graphical User Interface of the ClSerCOM Wrapper

The status bar displays a lot of information:



Status of connection (connected/not connected)

Com port name and Clser port name as configured for individual connection.

As soon as the ports have been defined and connected (automatically or manually), they are displayed in this status bar element.

For information on port configuration, refer to section Setting the Port Parameters.

COM port parameters in the order:

- baud rate
- parity
- data bits
- stop bit

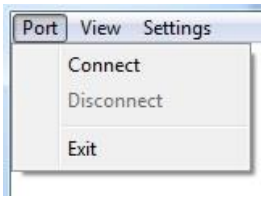
Status of *Echo* option (on/off)

If option *Echo* is set to *on*, the data communication between COM port and Clser port is displayed in the center of the program window

4.2 Main Menu

You have three main menus:

(1) Port:



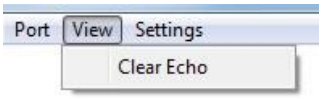
Connect / Disconnect:

Connect/disconnect the Clser port and the virtual Com port you have specified in Settings->Port Settings.

Exit:

Close the program.

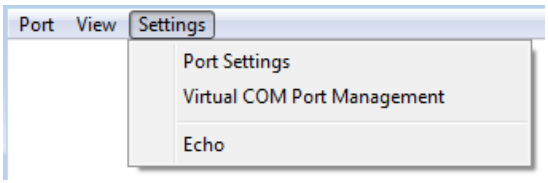
(2) View



Clear Echo:

Delete the echo information displayed in the center of the program window.

(3) Settings



Port Settings:

Set the parameters for COM port and ClSer port (see section Setting the Port Parameters).

Virtual COM Port Management:

Install/uninstall virtual COM ports (see section Installing Virtual COM Ports)

Echo:

Use this menu item as a check box to turn the echo display on/off.

If the Echo option is on, the menu item looks like this: 

4.3 Installing Virtual COM Ports

In the *Virtual COM Port* dialog you can manage the virtual COM ports.

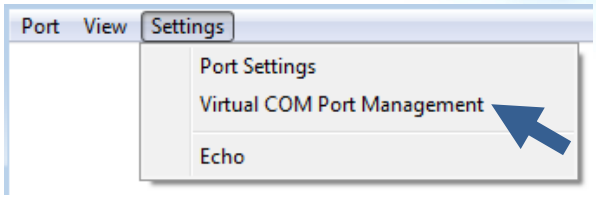


Figure 10: Selecting the *Virtual COM Port Management* dialog

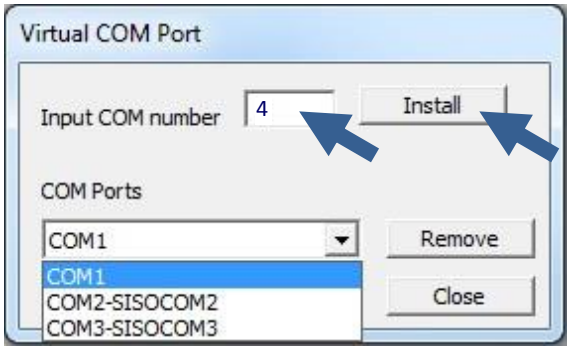


Figure 11: Dialog *Virtual COM port*

In the *COM Ports* list, all (virtual *and* physical) COM ports of the system are listed.

To install a new virtual COM port:

1. In the **Settings** menu, select **Virtual COM Port Management**.
   The *Virtual COM Port* dialog opens.
2. Enter a COM port number of your choice <x> into the *Input COM number* field.
3. Click on the **Install** button.
   A virtual COM port pair (COM<x>-SISOCOM<x>) is created. This may take some seconds.

   Naming convention:

   Port A: COM<x>

   Port B: SISOCOM<x>

To delete a virtual COM port:

1. In the *Virtual COM Port* dialog, select the virtual COM port pair you want to delete.
2. Click the **Remove** button.

Physical ports cannot be removed.

	**Administrator Access Rights Required** You need administrator access rights for all operations related to virtual COM ports (installing, uninstalling, etc.). If you get an error message from the com0com component, restart the program as administrator and retry.

	**Automatic Reset of Configuration File** As soon as you make changes to port names and connection parameters via the graphical user interface of the ClSerCOM Wrapper.exe, the entries of the configuration file are set accordingly (if a configuration file exists). The entries of the configuration file are used when setting up port connections with COMWrapperAutorun.exe.

4.4 Setting the Port Parameters

In the dialog Settings -> Port Settings you can specify the parameters of both ports (COM port and ClSer port).

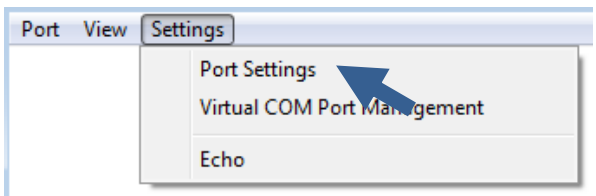


Figure 12: Selecting the Port Settings dialog

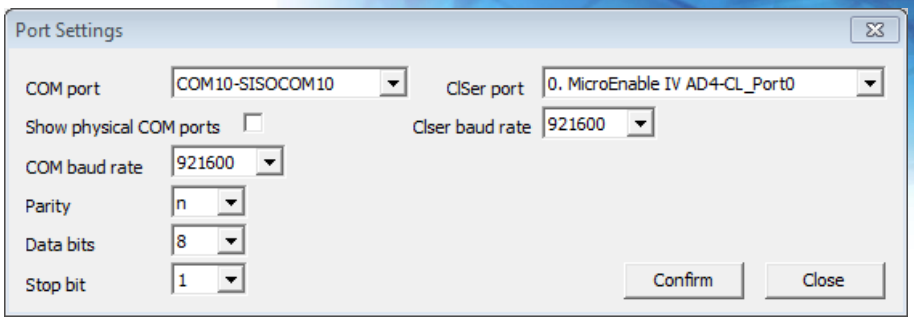


Figure 13: Dialog *Port Settings*

To set the parameters:

1. Select the ports you want to connect (COM port and ClSer port).

	Note In the *COM Port* list, only virtual COM port pairs are listed. If you check the *Show physical COM ports* option, not only the virtual, but also the physical COM ports are listed. Nevertheless, it is not possible to connect to a physical COM port.

2. Set the baud rate of both ports according to the camera manufacturer's recommendations (which you most probably find in the camera manual).

	Default: Maximum baud rate 921600 is the program's default value for the COM and ClSer baud rate. With a maximum baud rate of 921600, the maximum connection speed can be achieved. Since virtual COM port and ClSer port are connected on application level, there are no external influences like, e.g., cable length or cable quality to be considered.

3. Set the other values for parity, databits and stopbit as you need them.

4. Apply the new settings by clicking on the **Confirm** button.

	**Automatic reset of configuration file** As soon as you make changes to your connection parameters via the graphical user interface of the ClSerCOM Wrapper.exe, the entries of the configuration file are set accordingly (if a configuration file exists). The entries of the configuration file are used when setting up port connections with COMWrapperAutorun.exe.

4.5 Connecting the Camera Link Serial Port to the Virtual COM Port

You can connect the ports as soon as you have successfully:

- Installed all virtual COM ports you need (with the port number available on your system)
- set all connection parameters
- set all port parameters for each connection

To connect the Camera Link serial port to the virtual COM port:

1. In the **Port** menu, select **Connect**.

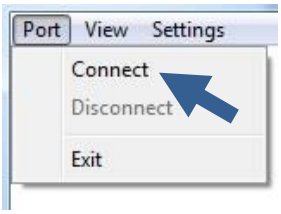


Figure 14: Connecting the Camera Link serial port to the virtual COM port

4.5.1 Display of Running Instances in the Taskbar

The installed virtual COM ports are displayed in the Windows taskbar:

Figure 15: Running ClSerCOM Wrapper instances as displayed in the Windows taskbar

The color of the COM port symbol informs about the connection status:

Connected: 

Not connected: 

If you place the mouse pointer on the symbol, the mouse over informs about the connected ports (COM <-> Clser), the frame grabber that provides the Clser for this connection, and the port settings:

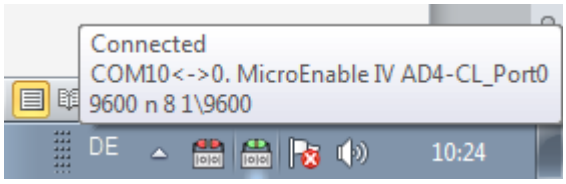


Figure 16: Mouse over information on prticular connection

For each virtual COM port, an instance of the ClSerCOM Wrapper is started.

To use the options of the ClSerCOM Wrapper:

2. Right-click on the COM port symbol in the taskbar.
   A menu with all menu options of the ClSerCOM Wrapper appears:

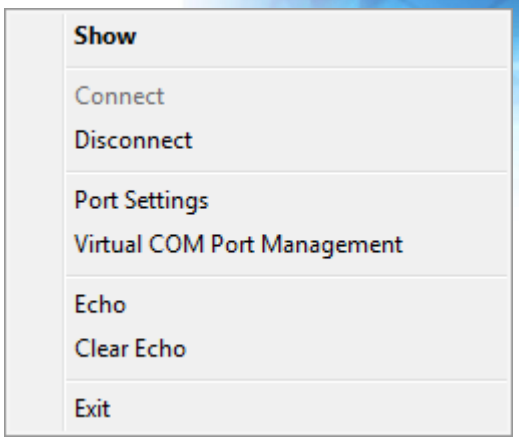


Figure 17: Context-sensitive ClSerCOM Wrapper menu

For details on the ClSerCOM Wrapper menu options, see section Main Menu.

To show the program window of the ClSerCOM Wrapper:

3. Click the **Show** option (or double-click on the COM port symbol).

	Connection Protection To avoid accidental disconnection, the connection between the ports persists independently of the program window: Even when you close the program window by clicking the close button , the ports stay connected.

If you want to go on reading on the COMWrapperAutorun.exe, proceed with section Default COM Port Numbers.

4.5.2 Display of Virtual COM Ports in the Windows Device Manager

The installed virtual COM Ports are displayed in the device manager.

The following display informs that two virtual COM ports are available:

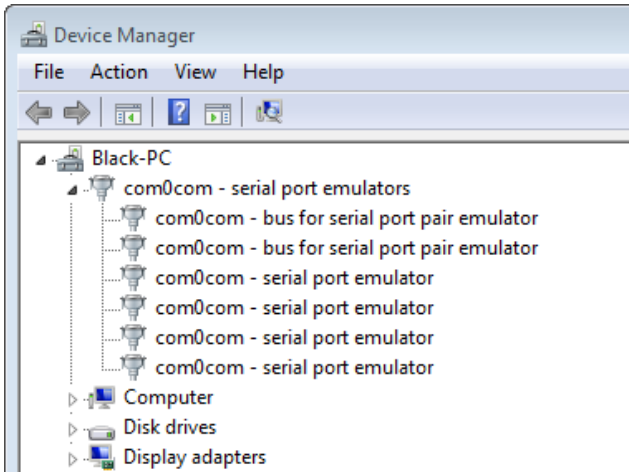


Figure 18: Virtual COM ports as displayed in the Windows Device Manager

Each virtual COM port is displayed with two serial port emulator entries (since the virtual COM port is actually a pair of ports, consisting of a Clser and a COM port). In addition, for each virtual COM port one bus is displayed (bus between Clser and COM port components).

4.6 Echo

To start the echo:

1. In the **Settings** menu, select option **Echo**.

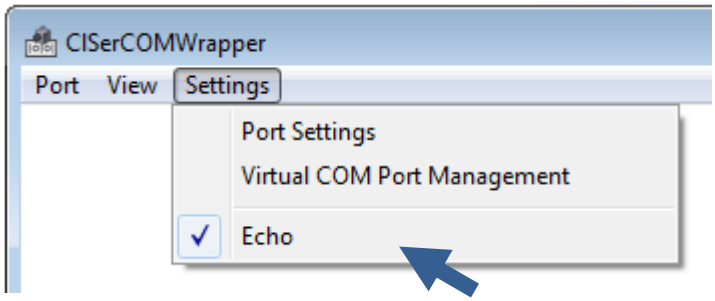


Figure 19: Setting Echo to on

As soon as you check the Echo option, all data transferred between COM port and CIser interface are displayed in the display area of the program window. They are displayed in two formats:

- ASCII format
- Hexadecimal value

Slowdown – Use for Debug Only

Displaying the echo slows down the transfer rate between the ports. You should use the echo option for debugging purposes only. Don't forget to uncheck the echo option after debugging.

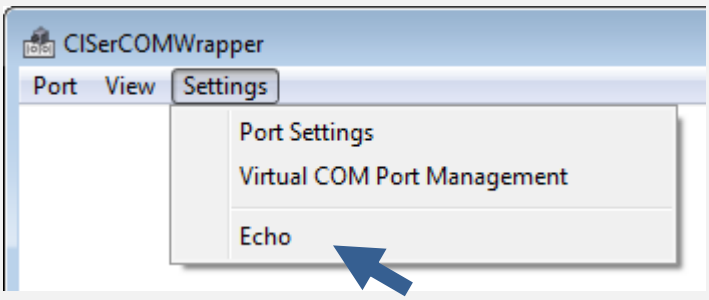


Figure 20: Setting Echo to off

If you want to delete the echo information displayed in the center of the program window:

1. In the **View** menu, select **Clear Echo**.

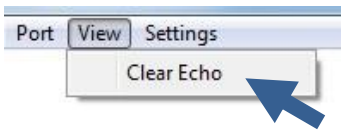


Figure 21: Clearing the Echo display in the center oft the program window

4.7 Starting ClSerCOM Wrapper Using Autostart Arguments

You can use autostart arguments to start the ClSerCOM Wrapper.exe. When you start ClSerCOM Wrapper.exe using autostart arguments, all connection parameters are set and the ports are connected automatically.

A typical program call using autostart arguments looks like this:

ClSerCOM Wrapper.exe -com2 -1 -9600,n,8,1

The arguments consist of three parts (the order of these parts is not relevant)

- Name of COM port
- Number of Clser port
- COM port parameters

Only COM port argument mandatory

You only have to state the name of the COM port as an argument. Stating the ClSer port and the COM port parameters is optional.

If you only state the name of the COM port:

- Ports are connected automatically with
- Default Clser port number (0)
- Default COM parameters (9600,n,8,1)

To start the program with autostart arguments:

1. Call the program following the syntax of the example below. State at least the COM port you want to connect.

   Syntax:
   ClSerCOM Wrapper.exe -<name of COM port> -<number of Clser port> -<COM port parameters in correct order>

Example:

ClserCOMWrapper.exe -com2 -1 -9600,n,8,1

The order of the third part of the autostart arguments, the COM port parameters, is mandatory.

2. When stating the COM port parameters, follow this order:
   <baud rate>,<parity>,<databits>,<stopbit>
   Only use a comma as separator.
   Don‘t insert blank characters.

The baud rate you state here will be used for COM port and ClSer port.

Important

If you start the program using autostart arguments, all error messages are suppressed.

The color of the symbols in the taskbar inform you if the ports are connected:

 = connected

 = not connected

If the program fails to connect the ports:

1. Check your port settings and parameter settings. The reason might be resource conflicts when installing additional COM ports.
2. Try to connect again. Now, all error messages are displayed.

5 Autorun Configuration File

The COMWrapperAutorun.exe makes sure there is a virtual COM port for each Clser port in the system. It installs all required virtual COM ports, starts as many instances of the ClSerCOM Wrapper as there are virtual COM port <-> ClSer port pairs, and triggers the ClSerCOM Wrapper instances to connect their individual virtual COM port <-> ClSer port pair.

In the configuration file *COMWrapperConfig.ini*, you can prepare autostart parameters for each V*irtual COM port <-> Clser port* connection you need in your system. These autostart parameters are used by the COMWrapperAutorun.exe when starting the ClSerCOM Wrapper instances, and by the ClSerCOM Wrapper instances when connecting the virtual COM ports to their Clser ports.

When the COMWrapperAutorun.exe application is started, it looks for the configuration file. The configuration file must be located in the same directory as the COMWrapperAutorun.exe.

- If there is a configuration file: COMWrapperAutorun.exe reads the data and uses them for parameterization. COMWrapperAutorun.exe creates autostart arguments for all required connections according to the data in the configuration file (for each connection, one instance of the ClSerCOM Wrapper will be started)
- If there is no configuration file: COMWrapperAutorun.exe automatically creates one, inserting default values for the virtual COM port numbers and for the connection parameters (see section Default Values).

5.1 Content and Syntax

The configuration file COMWrapperConfing.ini is structured like an initialization file (.ini).

In most cases, the configuration file consists of several sections. Each section provides the parameters for one virtual COM port <-> Clser connection.

A typical section looks like this:

```
[connection1]
com=COM2
Clser=0
baudrate=9600
parity=n
databit=8
stopbit=1
run=1
connect=1
```

Entry / Parameter	Function	Data Type	Description / Possible Values
[connection1]	Section Name	x	Name of section. The index starts at 1. There are as many sections in a configuration file as there are Clser ports available in the system.
com	Key	String	Name of COM port.
Clser	Key	Integer	Number of Clser port. The index starts at 0.
baudrate	Key	Integer	Baud rate, allowed values: 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600

Entry / Parameter	Function	Data Type	Description / Possible Values
parity	Key	String	Allowed values: n, e, o standing for: n - no parity e - even parity o - odd parity
databit	Key	Integer	Typical values: 5,6,7,8,9
stopbit	Key	String	Allowed values: 1, 1.5, 2
run	Key	Integer	Defines if an instance of ClserCOMWrapper.exe is to be started for this connection. Allowed values: 0,1 0 – instance is not started 1 – instance is started
connect	Key	Integer	Defines if the ports defined in this section should be connected immediately at the start of the ClSerCOM Wrapper instance. Allowed values: 0, 1 0 – no connect at start 1– ports are immediately connected

Don’t connect unused Clser ports

When using Medium or Full Camera Link cameras, we recommend not to connect the second Clser port of the frame grabber.

To prevent the system from autoconnecting to the second Clser port:

1. Set the keys **run** and/or **connect** to 0.

5.2 Editing the Configuration File

To edit the configuration file:

1. Go to the directory where the COMWrapperAutorun.exe is located.
2. Open the configuration file *COMWrapperConfig.ini*.
3. Make changes as you need to. The parameters you enter here will be used by the (automatically started) COMWrapper instances for setting up the individual connections.

Specify Only One Connection Per Port

Connections are not identified by the section name, but by the combination of a particular COM port with a particular Clser port.

If you enter the same COM port or ClSer port in different sections of the configuration file, only one connection to the particular port will be set up.

Automatic Reset of Configuration File

The entries of the configuration file are reset automatically as soon as you make changes to your connection parameters via the graphical user interface of the ClserCOMWrapper.exe. The entries of the configuration file are set according to the settings you specify using the GUI.

5.3 Default Values

5.3.1 Default COM Port Numbers

Each Silicon Software Camera Link frame grabber has two external Camera Link ports (A and B) for connecting one camera (Medium/Full) or two cameras (Base).

The COMWrapperAutorun application uses the following COM port numbers as defaults when installing virtual COM ports and connecting them to the Camera Link ports of the frame grabber(s):

COM Port Number	Frame Grabber	External Camera Link Port of the Frame Grabber	Internal serial port (Clser port) number
10	Frame Grabber No. 1	Port A	0
11	Frame Grabber No. 1	Port B	1
12	Frame Grabber No. 2	Port A	2
13	Frame Grabber No. 2	Port B	3
14	Frame Grabber No. 3	Port A	4
15	Frame Grabber No. 3	Port B	5
etc.	etc.	etc.	etc.

5.3.2 Default Connection Parameters

The default connection values are:

- baudrate=9600
- parity=n
- databit=8
- stopbit=1
- run=1
- connect=1

5.4 ClSerCOM Wrapper and Configuration File

As soon as you make changes to your connection parameters via the graphical user interface of the ClserCOMWrapper.exe, the entries of the configuration file are set accordingly.

However, the ClserCOMWrapper.exe doesn't create a configuration file. Therefore, if no configuration file exists, the changes you make on the graphical user interface of the ClserCOMWrapper.exe will not be stored for use with the COMWrapperAutorun.exe. (To set up a configuration file, either start the COMWrapperAutorun.exe once, or create a configuration file manually as described in section Content and Syntax).

Write Only

ClserCOMWrapper.exe does not read the configuration file. It only writes into it as soon as ports are installed/uninstalled or connection settings are changed via its GUI. The configuration file is intended for use with COMWrapperAutorun.exe only.

To parameterize a separately started instance of the ClserCOMWrapper.exe, you can either

- use autostart arguments (see section Starting ClSerCOM Wrapper Using Autostart Arguments).
- Start the instance first and then reset the port and connection settings as you want (see sections Installing Virtual COM Ports and Setting the Port Parameters).

Automatic Reset of Configuration File

Keep in mind that when resetting via the ClSerCOM Wrapper GUI, the entries of the configuration file are reset accordingly (if a configuration file exists).

6 Adaptation to Existing System Environment

You might not be able to use the default virtual COM ports (COM10, COM11 etc.) for connecting to the camera via the frame grabber, e.g., because of conflicts with other programs.

In this case, you can adapt the default settings of COMWrapperAutorun.exe to your needs.

To adapt the settings so that you can use COMWrapperAutorun.exe within your system:

1. Delete all virtual COM ports that have already been created:
    a. Start ClserCOMWrapper.exe with administrator rights.
    b. From the **Settings** menu, select **Virtual COM Port Management.**
    The *Virtual COM Port* dialog opens.
    c. Select the virtual COM port pair you want to delete.
    d. Click the **Remove** button.
    e. Repeat until all virtual COM ports are deleted.

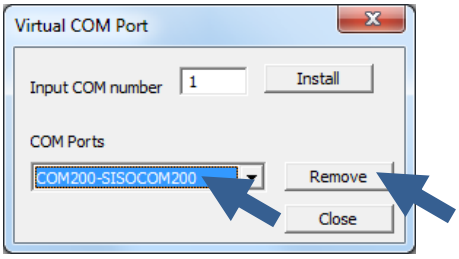


Figure 22. Deleting virtual COM ports

2. Create as many virtual COM ports as you have Clser ports available in your system, defining the port numbers that are not yet used in your system.
    a. Start ClserCOMWrapper.exe with administrator rights.
    b. In the **Settings** menu, select **Virtual COM port**.
    The *Virtual COM Port* dialog opens.
    c. Enter a COM port number of your choice <x> into the *Input COM number* field.
    d. Click on the **Install** button.
    e. Repeat until you have all virtual COM ports you need.

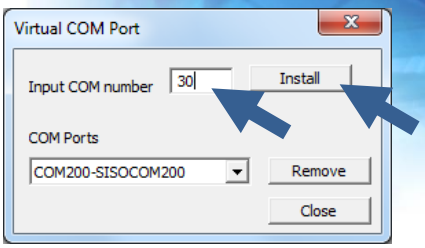


Figure 23: Installing virtual COM ports

3. Open the configuration file COMWrapperConfig.ini, check the changes you made on the GUI, and edit if you need to (see section Content and Syntax).
4. Restart COMWrapperAutorun.exe.
   All instances of the ClserCOMWrapper are started again, using the new parameters you entered into the configuration file.

Contact Details

SILICONSOFTWARE GmbH
Steubenstrasse 46
D - 68163 Mannheim, Germany
Phone: +49(0)621.789 507 39
Fax: +49(0)621.789 507 10
Email: vertrieb@silicon-software.de
Web: www.silicon-software.info

SILICONSOFTWARE Inc.
1 Tara Boulevard, Suite 200
Nashua, NH 03062, USA
Phone: +1 603 324 7172
Fax: +1 603 324 7101
Email: info@silicon-software.com
Web: www.silicon-software.info

Disclaimer

While every precaution has been taken in the preparation of this manual, Silicon Software GmbH assumes no responsibility for errors or omissions. Silicon Software GmbH reserves the right to change the specification of the product described within this manual and the manual itself at any time without notice and without obligation of Silicon Software GmbH to notify any person of such revisions or changes.

Trademarks

All trademarks and registered trademarks are the property of their respective owners.

Copyright Note