



Cheetah CMOS Camera

Software Installation Quick Start

for Camera Link®, USB3, GigE Vision® and 10 GigE Vision with ON Semiconductor Python and KAC sensors

This Quick Start guide provides software installation steps for the Cheetah camera with the ON Semiconductor Python and KAC sensors and following interfaces: Camera Link®, USB3 (U3V), GigE Vision® (GEV), and 10 GigE Vision (10G).

For configuring Cheetah CoaXPress camera, use a GenICam™ compliant programming interface provided by your frame grabber.

Imperx provides the following camera configuration software for your Cheetah camera:

- Imperx Camera SDK software, GenICam™ compliant (includes SDK and IpxPlayer application) for USB3, GigE Vision® (GEV), or 10 GigE Vision (10G) cameras.
- CamConfig software for Camera Link® cameras.

The Imperx Camera SDK and CamConfig software is compatible with the following operating systems:

Imperx Camera SDK software	CamConfig software
Windows 10, 32-bit and 64-bit	Windows 10, 32-bit and 64-bit
Ubuntu Linux 18.04 64-bit	
Ubuntu Linux 18.04 64-bit, ARM CPU	
Ubuntu Linux 20.04 64-bit	
Ubuntu Linux 20.04 64-bit, ARM CPU	

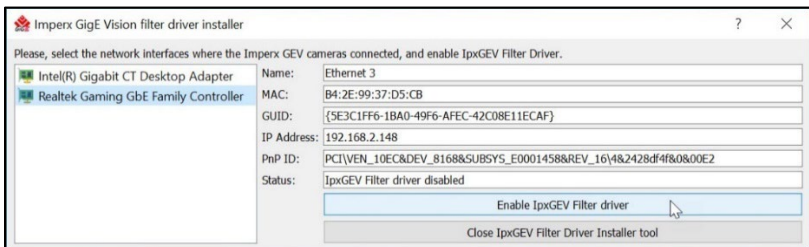
IMPORTANT: If an older version of the configuration software is on your computer, you must remove it before completing the installation. The installation wizard will do this for you during the installation process. Or you can uninstall a previous version yourself.

1. Removing previous version

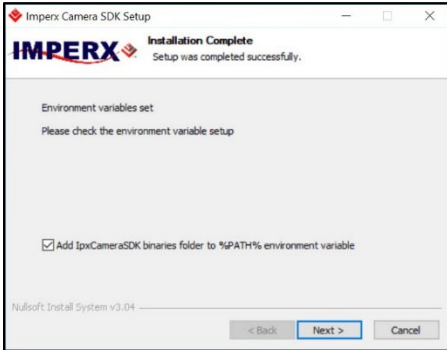
- 1.1. Open **Control Panel** on your computer.
- 1.2. Select **Programs and Features**.
- 1.3. Select one of the following programs: Cheetah Camera Link, or Imperx Camera SDK and click **Uninstall**.

2. Installing the Software in Windows OS

- 2.1. Drag either **IpxCameraSdk***.exe** or **Cheetah_CL_x_x_x.exe** file to your desktop and double click it. Note the recommendation to close other applications and then click **Next**.
- 2.2. Read the License Agreement and click **I Agree** to accept the license terms.
- 2.3. Follow the on-screen instructions until complete.
- 2.4. For GigE Vision cameras, select network adapters that are connected to Imperx GigE Vision cameras, click **Enable IpxGEV Filter driver**, and close the filter driver installer.



2.5. For GigE Vision cameras, make sure that the environment variable setup is checked and click Next.



2.6. Reboot your computer. A shortcut icon appears on your desktop.

3. Installing the Imperx Camera SDK Software in Linux

3.1. Run the IpxCameraSDK installer using the console:

```
tester@kola-ubuntu18:~$ ./IpxCameraSDK_1.5.0.54-Ubuntu_18.04-x86_64.sh
```

3.2. Read the Warning message and press Enter:

```
tester@kola-ubuntu18:~$ ./IpxCameraSDK_1.5.0.54-Ubuntu_18.04-x86_64.sh
IpxCameraSDK Installer Version: 1.5.0.54, Copyright (c) Imperx, Inc.

This is a self-extracting archive.

*****
WARNING:
*****
If you are planning to display an image that is greater than 7MB. You must
login as root to modify the usbfs_memory_mb. You can modify the size of the
usbfs memory if needed by editing:

'/sys/module/usbcore/parameters/usbfs_memory_mb' file.

For example:

sudo sh -c "echo 1000 > /sys/module/usbcore/parameters/usbfs_memory_mb"

or

just run the "manage_usbfs_memory_size.sh" script as sudo which is
located in the "bin/Linux64_x64" installed directory

Press enter to continue.
█
```

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3.3. Read the Note message and press Enter:

```

*****
NOTE:
*****
This 'usbfs_memory_mb' command must be reset each time you reboot your system.
Please consult with your system administrator for further instructions on
how to set this usbfs_memory_mb value permanently.
If your init system is systemd, you can use "usbfs-memsize-systemd.service"
file to set desired size of usbfs_memory_mb(default 1000) permanently.
Just copy "usbfs-memsize-systemd.service" to /etc/systemd/system directory
and run following commands: cd /etc/systemd/system
sudo systemctl enable usbfs-memsize-systemd.service

Press enter to continue.

```

3.4. Read the Warning message and type Y or N:

```

*****
WARNING:
*****
You are running this script as a regular user!

To be able to use the USB3 Vision Device you must add
an udev rule to the system to allow the regular user to access the device.

If you proceed as a regular user, you will not be able to install the udev
rule. However, you can do this action later by running the
"manage_udevrules.sh" script as sudo. This script is located in the
"bin/Linux64_x64" installed directory.

Would you like to proceed? [Yn]:

```

3.5. Accept the default destination directory or change it:

```

The archive will be extracted to:
/home/tester

You can change the default directory to your specified location by running
the archive with the flag --prefix=dir

For example:

"./IpxCameraSDK_1.5.0.54-Ubuntu_18.04-x86_64.sh --prefix=/opt/imperx"

If you want to stop extracting, please press <ctrl-C>.

By default the IpxCameraSDK will be installed in:

"/home/tester/IpxCameraSDK-1.5.0.54"

Do you want to include the subdirectory IpxCameraSDK-1.5.0.54?

Typing 'n' will install it at the following location:
"/home/tester" [Yn]:

```

```

Using target directory: /home/tester/IpxCameraSDK-1.5.0.54
Extracting, please wait...

Unpacking finished successfully!

Installed successfully!
Thank you for using IpxCameraSDK!

```

3.6. To open the IpxPlayer application, run the following command:

```
tester@kola-ubuntu18:~$ cd ~/IpxCameraSDK-1.5.0.54/bin/Linux64_x64/
tester@kola-ubuntu18:~/IpxCameraSDK-1.5.0.54/bin/Linux64_x64$ sudo ./manage_rp_filter.sh
[sudo] password for tester:
Setting rp_filter mode to 'Strict Reverse Path'....
For all the system's interfaces
Setting rp_filter mode to 'Strict Reverse Path' DONE
tester@kola-ubuntu18:~/IpxCameraSDK-1.5.0.54/bin/Linux64_x64$ sudo ./manage_socket_buffer_size.sh
Setting socket write maximum buffer size to 10485760 bytes
Setting socket read maximum buffer size to 10485760 bytes
tester@kola-ubuntu18:~/IpxCameraSDK-1.5.0.54/bin/Linux64_x64$ sudo ./manage_usbfs_memory_size.sh
Setting usbfs memory size to 1000 ...
usbfs memory size has been set to 1000
tester@kola-ubuntu18:~/IpxCameraSDK-1.5.0.54/bin/Linux64_x64$ ./IpxPlayer
```

4. Achieving Best Performance for Cheetah Camera Link Cameras:

- For Camera Link models C2880 and C4080, set the line time to the minimum value possible without causing overruns / missed frames.
- For Camera Link models C4180, C4181, 5180, set pixel clock to the maximum rate possible without causing overruns or missed data. In addition, enable Zero-ROT feature unless prompted otherwise.

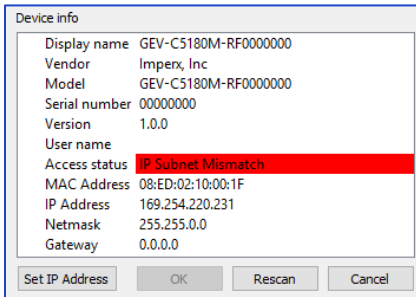
5. Troubleshooting CamConfig Configuration Software:

If the CamConfig software does not find your computer's COM ports, you might need to locate your frame grabber's DLL file and move it to C:\Windows\System32. You can search File Explorer for the DLL file by entering clser* in the search field. Note: your frame grabber's vendor name abbreviation should appear where XXX is shown in the clserXXX.dll file name.

6. Troubleshooting IpxPlayer application

6.1. Setting an IP address

6.1.1. The first time you attempt to connect to a GEV or 10G camera, you might need to set the IP address if IP Subnet Mismatch appears highlighted in red and the OK button is not available (on the Select Camera screen, see below).



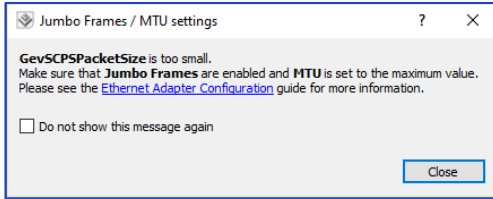
6.1.2. Click **Set IP Address**, the Set IP Address screen appears. Click **OK**.

6.1.3. Click **OK** on the Select Camera screen.

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6.2. Jumbo Frames / MTU Settings

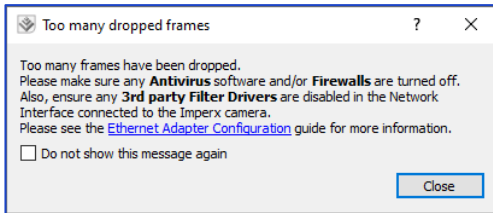
- 6.2.1. If your network adapter has Jumbo Packets disabled, the following pop-up window opens while connecting the camera:



- 6.2.2. To enable Jumbo Frames and adjust the MTU size, please refer to the Ethernet Adapter Configuration guide by clicking a link on the pop-up window. You can also find the Ethernet Adapter Configuration guide in the camera's ZIP archive.

6.3. Too many dropped frames

- 6.3.1. When too many frames have been dropped, the video acquiring slows down. The following pop-up window opens:



- 6.3.2. To turn off the Firewall, please refer to the Ethernet Adapter Configuration guide by clicking a link on the pop-up window. You can also find the Ethernet Adapter Configuration guide in the camera's ZIP archive .
- 6.3.3. Please contact your IT Department on turning off antivirus software and any third-party filter drivers.

For information, updates, and downloads, visit www.imperx.com

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