

See3CAM DFU

# DFU Application User Manual



**e-con Systems**

Your Product Development Partner

Version 1.5

e-con Systems

1/9/2021

### **Disclaimer**

e-con Systems reserves the right to edit/modify this document without any prior intimation of whatsoever.

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# Introduction to Firmware

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The firmware is a program, embedded into See3CAM, which ensures proper functioning of the device. The firmware can control all the features of the device.

See3CAM has a stable firmware that has been embedded to the device. But as e-con Systems continuously works on this project, new firmware will be released which will have additional features that are supported in the See3CAM device. Please refer to *Firmware Release Notes.pdf* of See3CAM device to know about additional features. The new firmware also includes bug fixes, and hence it is the essential to upgrade this firmware to avail the new features of See3CAM device.

This document describes about the process of updating a new firmware in the See3CAM product. In future to add new functionalities to the See3CAM device, e-con Systems will release new firmware binary. You can update this firmware into the See3CAM device by using the See3CAM\_DFU application.

**Note:** This document is applicable for all DFU versions from 1.0.49.1 and above.

## Prerequisites

The prerequisites are as follows:

- Access to [Developer Resources](#) website for firmware update.
- Download the **See3CAM\_DFU Firmware Updater Application Installer.zip** file.

If you do not have the access to [Developer Resources](#) website, please write to [techsupport@e-consystems.com](mailto:techsupport@e-consystems.com) to get the login credentials.

# Installing the See3CAM\_DFU Application

This section describes the steps for installing the See3CAM\_DFU application.

To perform a firmware update, it is essential to install the See3CAM\_DFU application. The steps to install the See3CAM\_DFU application are as follows:

- Step 1. [Welcome Screen](#)
- Step 2. [Installation Path Selection](#)
- Step 3. [Installation Progress Window](#)
- Step 4. [Completion Window](#)

## Step 1 - Welcome Screen

As a first step, extract the **See3CAM\_DFU Firmware Updater Application Installer.zip** file. When you run the **See3CAM\_DFU\_Installer setup.exe** file, the Welcome screen appears as shown below.

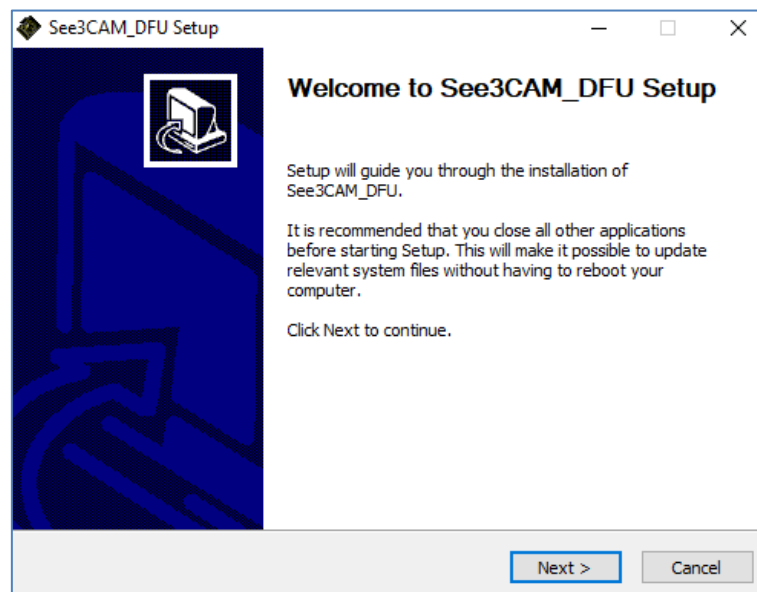
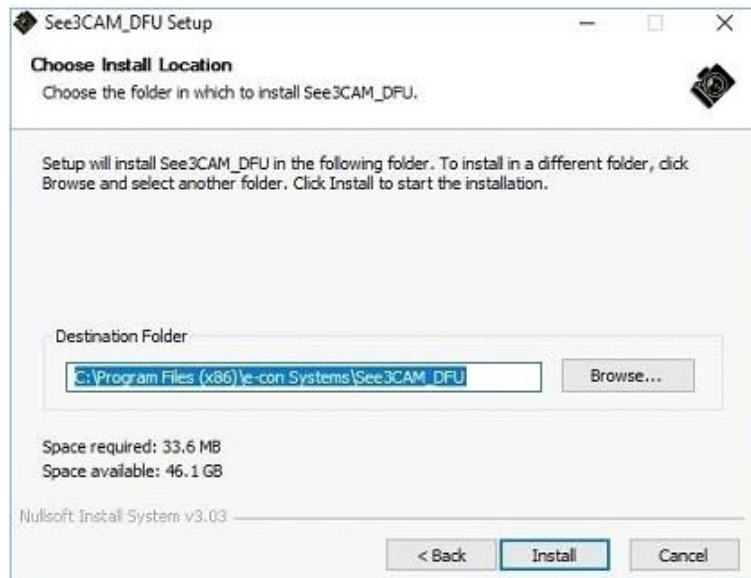


Figure 1: Welcome Screen

Click **Next**.

## Step 2 - Installation Path Selection

When you click **Next**, you can view the screen similar to the installation path selection window shown below.



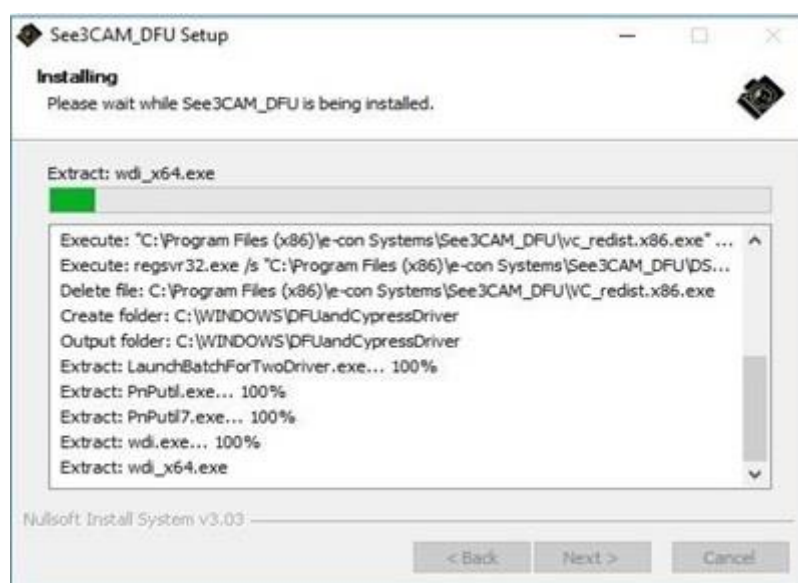
**Figure 2: Installation Path Selection Window**

You can use the default installation path **C:\Program Files\e-con Systems\See3CAM\_DFU\** for 32-bit OS, **C:\Program Files (x86)\e-con Systems\See3CAM\_DFU\** for 64 bit OS or change to another installation path by clicking **Browse**.

Click **Install** to install the See3CAM\_DFU application.

### Step 3 - Installation Progress Window

This is the final stage of installation. During this stage, all the required files are extracted, and copied to specific location. The progress of installation appears as shown below.



**Figure 3: Installation Progress Window**

## Step 4 - Completion Window

After the See3CAM\_DFU installation, you can view the See3CAM\_DFU Setup completion window as shown below.

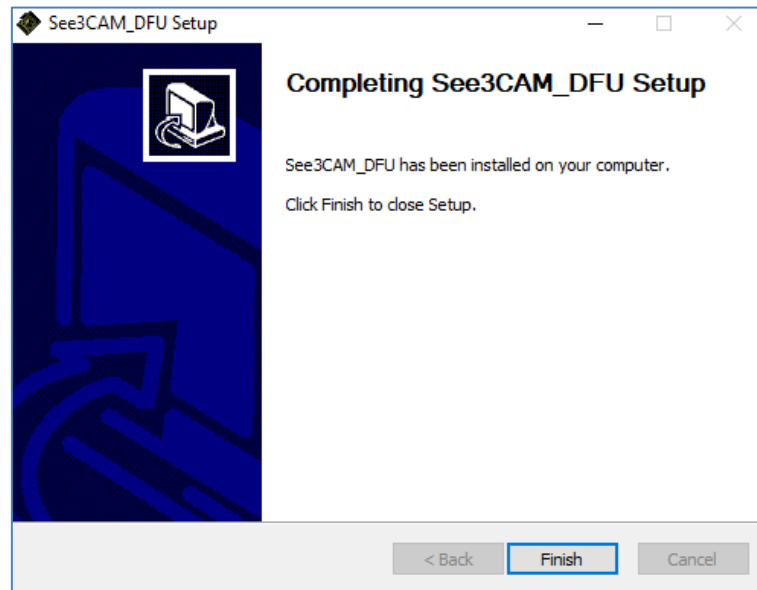


Figure 4: See3CAM\_DFU Setup Completion Window

Click **Finish** to exit the Setup Wizard.

# Using the See3CAM\_DFU Application

This section describes how to update the firmware for See3CAM family of devices.

The steps to update the firmware of any See3CAM device using See3CAM\_DFU application are as follows:

- Step 1. [Device Selection](#)
- Step 2. [Firmware Selection](#)
- Step 3. [Firmware Update Process](#)
- Step 4. [Firmware Update Complete](#)

## Step 1 - Device Selection

Click the **Device** drop-down list box which lists all the devices connected to the PC and select the device to update the firmware.

If the device is connected to update the firmware, **Device is Connected** label will be displayed as shown below.

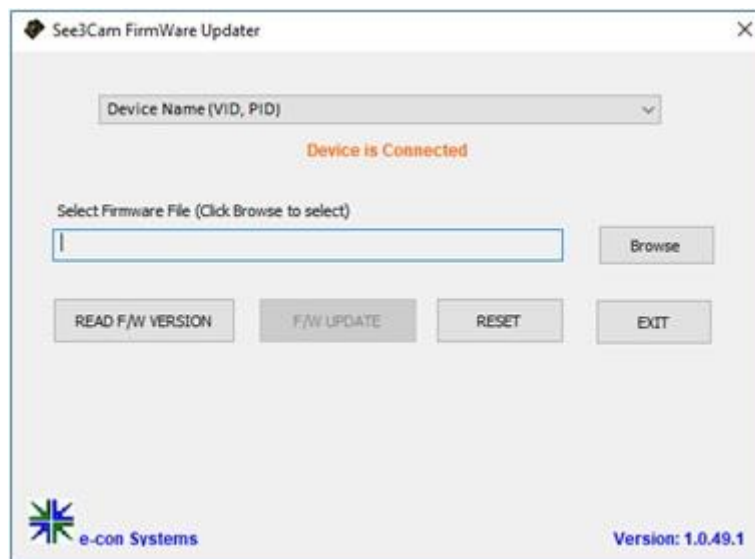


Figure 5: Device Connected

### Note:

- Device Name(VID, PID) is the name of the device with VID and PID, which is selected. For example - See3CAM\_CU20(VID\_2560, PID\_C120\_0).
- The connected device name (Device Name(VID, PID)) will change for every See3CAM Products.
- The firmware update procedure is common for all products.

Please refer to the *See3CAM\_Updater\_Release\_Notes.pdf* to know more about the supported products.



If no devices are connected for update, **No Device Connected** label will be displayed as shown below.

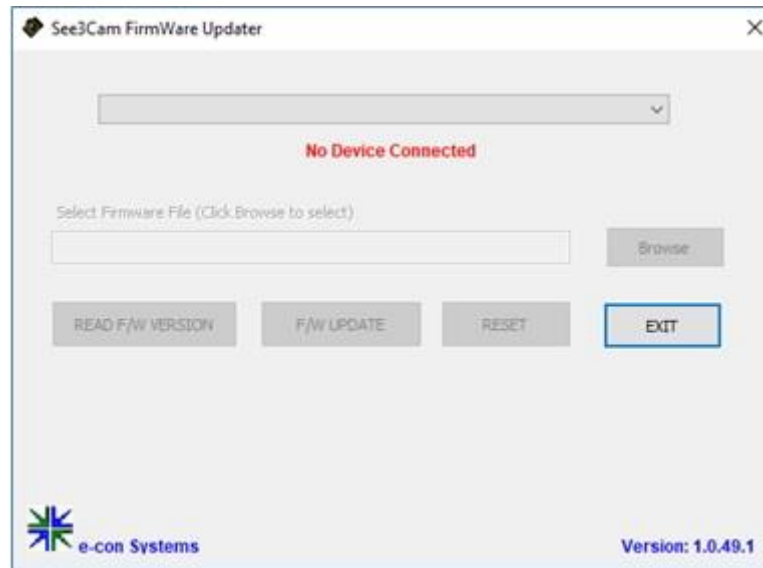


Figure 6: No Device is Connected

## Step 2 - Firmware Selection

Click **Browse** when the device is connected and select the firmware image. You can view the screen similar to the firmware image selection window shown below.

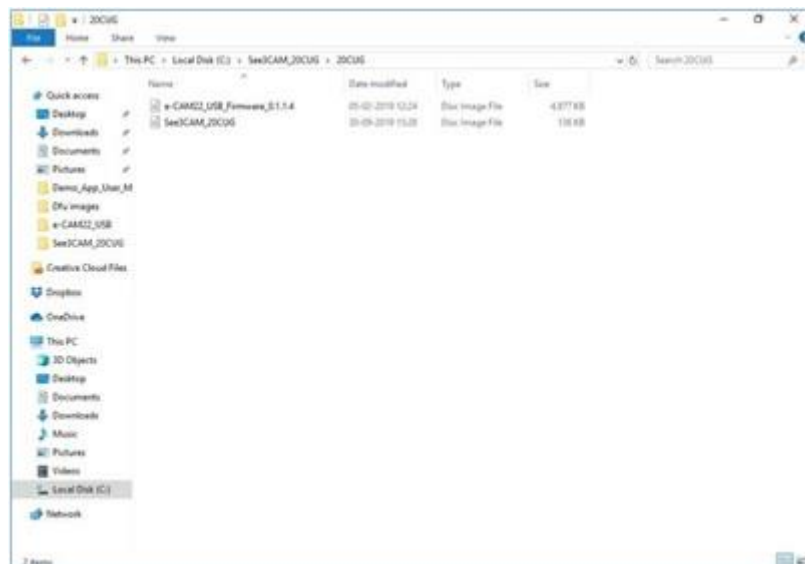


Figure 7: Firmware File Selection Window

**Note:** Verify the product name and firmware version before proceeding. In case of updating the incorrect firmware, device may become unresponsive.

## Step 3 - Firmware Update Process

When the **F/W UPDATE** button is pressed, the DFU checks whether the valid firmware is selected.

In case of incorrect firmware, the warning screen appears as shown below.

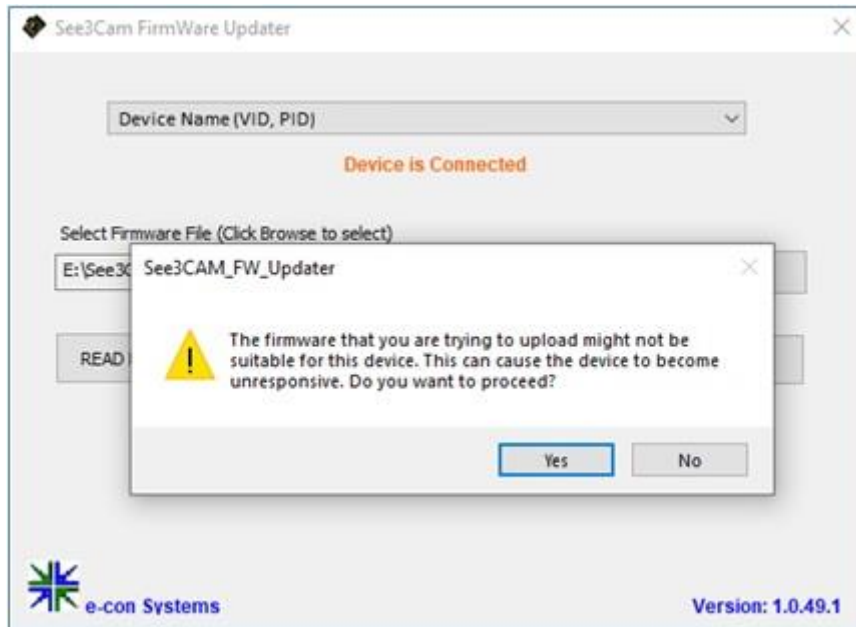
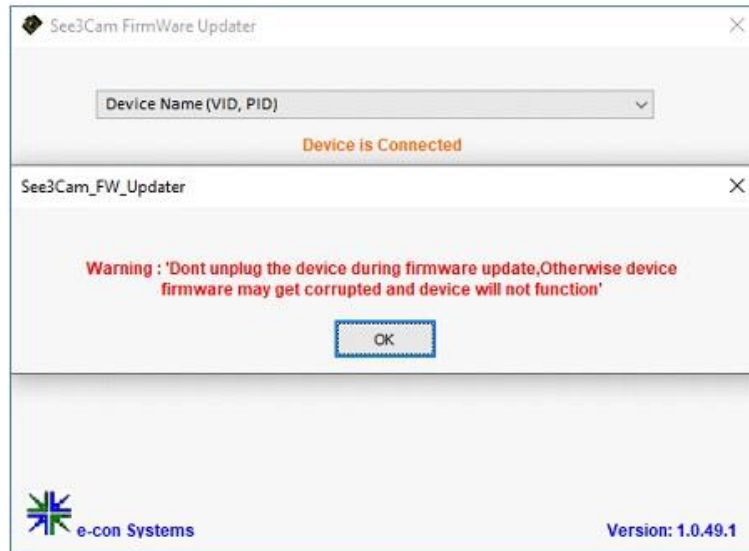


Figure 8: Incorrect Firmware File Selection

Click **No** to exit incorrect firmware update. If you click **Yes**, then the incorrect firmware update process starts.

Follow *Step 2 - Firmware Selection* section to select the valid firmware.

If the selected firmware is valid firmware, then the firmware update process starts. You can view the screen similar to the screen shown below.



**Figure 9: Firmware Update Warning Window**

Click **OK** in the **See3Cam\_FW\_Updater** dialog box. The device switches to firmware update mode and starts erasing the old firmware as shown below.



**Figure 10: Switching to Firmware Update Mode and Erasing the Old Firmware**

The application reads the firmware file and updates it into the device. The progress of updating firmware appears as shown below.

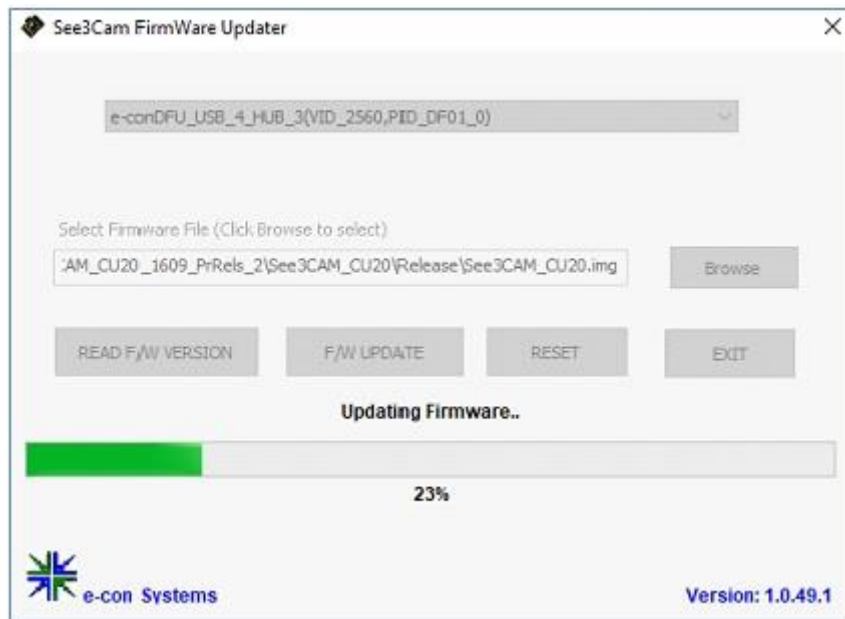


Figure 11: Firmware Update in Progress

**Warning:** Do not disturb the USB connection or unplug the camera when the firmware update is in process.

## Step 4 - Firmware Update Complete

Once the progress bar reaches 100%, the device will automatically reset and gets detected with new firmware as shown below.

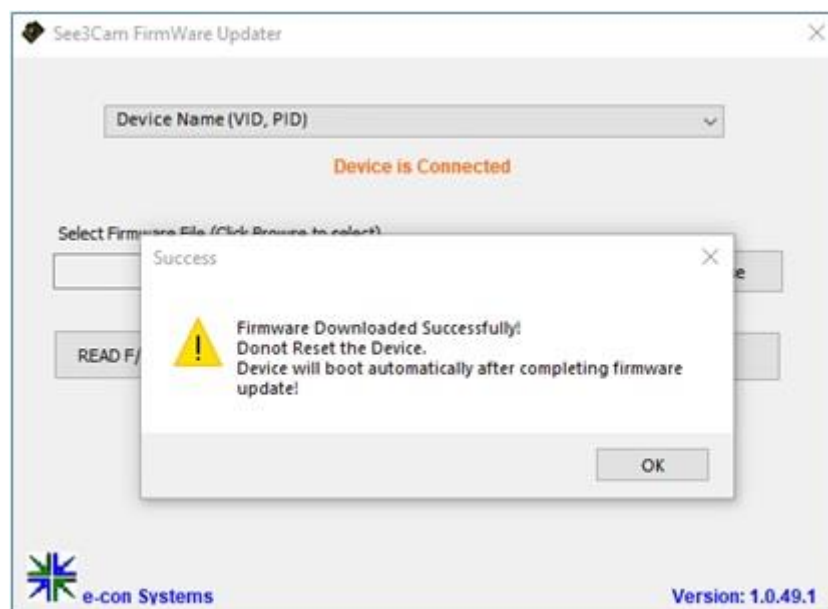
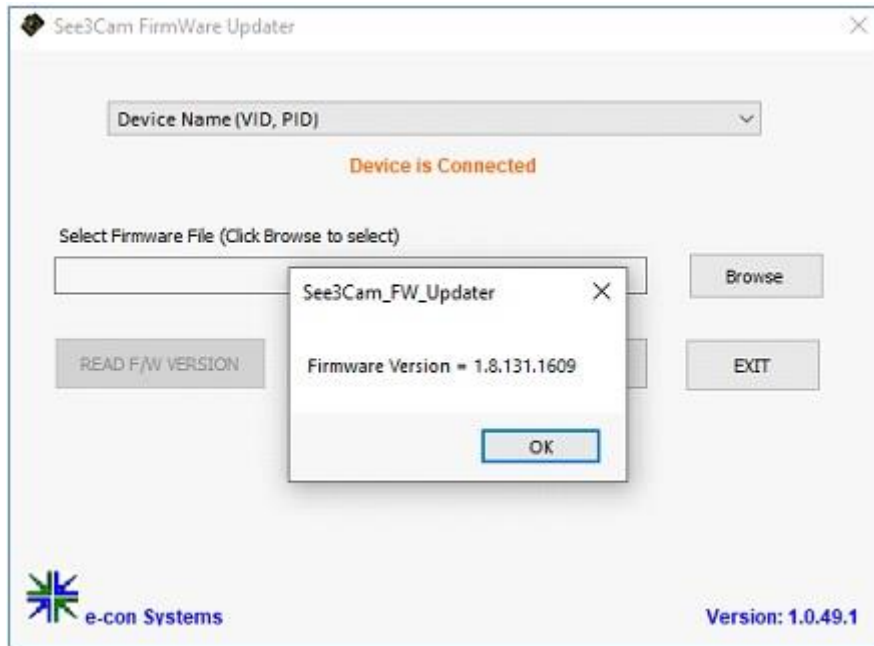


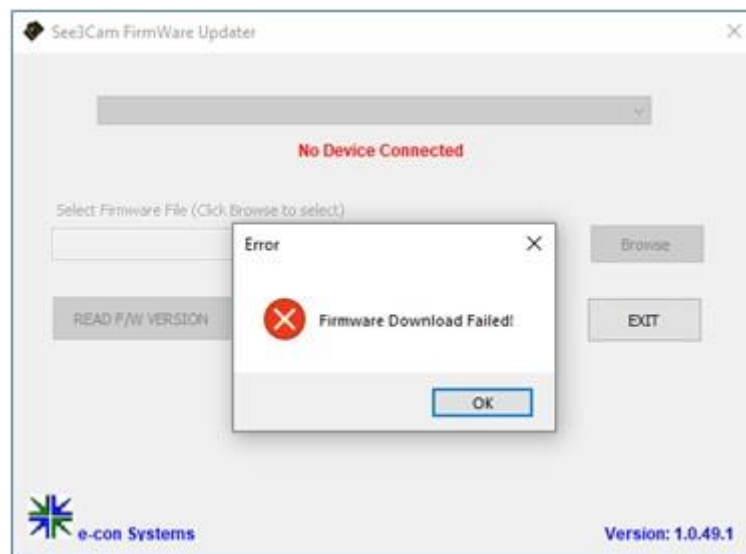
Figure 12: Firmware Update Complete

You can click **READ F/W VERSION** to check if the firmware is updated and can view the Firmware Version as shown below.



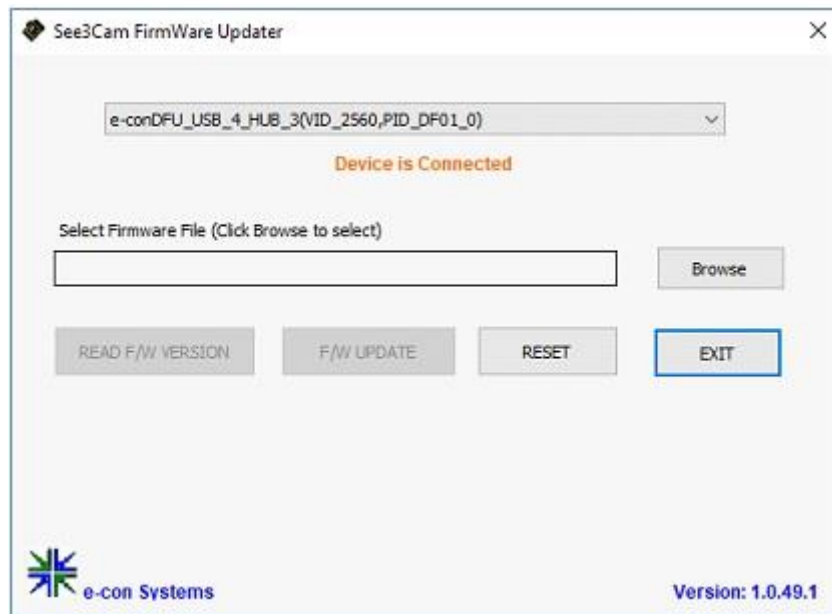
**Figure 13: Reading the Firmware Version**

If there is a bad USB connection or if you remove the device in the middle of firmware update, then the application displays a **Firmware Download Failed!** message as shown below.



**Figure 14: Firmware Update Failure**

In this case, the device is connected as **e-conDFU\_USB\_1\_HUB\_0(VID\_2560, PID\_DF01\_0)** as shown below.



**Figure 15: Device in e-con DFU Mode**

**Note:** You must again follow the steps 1 to 4 to retry the firmware update process.

# Troubleshooting

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In this section, you can view the list of commonly occurring issues and their troubleshooting steps.

**Device connected, indication LED is Red, and the device is not listed in the application or device manager.**

It seems like device firmware is corrupted. Try re-flashing firmware image using firmware updater application from [Developer Resources](#) website. If this does not help, contact e-con Systems online support [support@e-consystems.com](mailto:support@e-consystems.com).

**The application displays a *Firmware Download Failed!* message during the firmware update process.**

It seems like there was a removal of device or a bad USB connection during firmware update process. Do not disturb the USB connection or unplug the camera when the firmware update is in process. Please retry *Step 1 - Device Selection* (The camera will already be in Firmware Update mode) to *Step 4 - Firmware Update Complete* for firmware update process.

**1. I can view frame corruption while streaming. Can this be avoided?**

Yes, this is due to bandwidth limitation in USB host. This may occur when multiple cameras are connected to single USB host or in USB hosts of less powerful embedded boards. Visit e-con Systems blog <https://www.e-consystems.com/blog/camera/?p=1720> for more information on USB practical bandwidths.

**2. What sort of support does e-con Systems provide along with the camera?**

e-con Systems will provide the basic support on the evaluation for all the customers who have purchased the camera. The hardware/software/firmware customization of the kit will be provided by e-con Systems based on your requirements. e-con Systems will also manufacture your custom cameras and will be supplied.

**3. Is there any software available with the camera?**

Yes, e-con Systems provide e-CAMView for Windows and QtCAM for Linux sample application demonstrating the capabilities of this camera.

**4. What are the supported OSes?**

The supported OSes are Windows 8.1 and 10.

**5. The camera is not suitable for my requirements. Can I return the camera?**

No, the kit is non-returnable and non-refundable. However, the kit is under warranty and e-con Systems will replace for any failed kit under warranty terms.

**6. The camera is getting very hot. Is it suitable for usage?**

Yes, but the camera module needs an external heat sink to dissipate the heat for prolonged usage.

**7. I would like to use a different lens. What is the NRE charge?**

If your application requires fixed focus custom lens, contact [sales@e-consystems.com](mailto:sales@e-consystems.com). The Non-recurring engineering (NRE) refers to the one-time cost to research, design, develop and test a new product or product enhancement.



# What's Next?

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After understanding the usage of DFU application, you can refer to the following documents to understand more about See3CAM Products.

- *Firmware Release Notes*
- *e-CAMView Streaming Application User Manual*

# Glossary

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**LED:** Light Emitting Diode.

**NRE:** Non-recurring Engineering.

**OS:** Operating System.

**PID:** Product ID.

**USB:** Universal Serial Bus.

**VID:** Vendor ID.

# Support

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## **Contact Us**

If you need any support on See3CAM product, please contact us using the Live Chat option available on our website - <https://www.e-consystems.com/>

## **Creating a Ticket**

If you need to create a ticket for any type of issue, please visit the ticketing page on our website - <https://www.e-consystems.com/create-ticket.asp>

## **RMA**

To know about our Return Material Authorization (RMA) policy, please visit the RMA Policy page on our website - <https://www.e-consystems.com/RMA-Policy.asp>

## **General Product Warranty Terms**

To know about our General Product Warranty Terms, please visit the General Warranty Terms page on our website - <https://www.e-consystems.com/warranty.asp>

## Revision History

Rev	Date	Description	Author
1.0	11-November-2019	Initial Draft	Doc Team
1.1	03-December-2019	Screenshots updated	Camera Dev Team
1.2	06-January-2020	Introduction updated	Camera Dev Team
1.3	22-June-2020	Updated changes	Camera Dev Team
1.4	24-June-2020	Updated the product name	Camera Dev Team
1.5	09-January-2021	Updated Changes	Camera Team