

See3CAM\_130E

# Getting Started Manual



**Disclaimer**

The specifications of the See3CAM\_130E camera board and instructions on how to connect this board to a PC are provided as a reference only, and e-con Systems reserves the right to edit/modify this document without any prior intimation of whatsoever.

## Contents

|                                                                         |           |
|-------------------------------------------------------------------------|-----------|
| <b>INTRODUCTION TO SEE3CAM_130E</b>                                     | <b>3</b>  |
| <b>PREREQUISITES</b>                                                    | <b>3</b>  |
| <b>HARDWARE REQUIREMENTS</b>                                            | <b>3</b>  |
| <b>SOFTWARE REQUIREMENTS</b>                                            | <b>4</b>  |
| <b>PARTS SUPPLIED</b>                                                   | <b>4</b>  |
| <b>DESCRIPTION</b>                                                      | <b>4</b>  |
| <b>SETTING UP SEE3CAM_130E</b>                                          | <b>6</b>  |
| <b>SEE3CAM_130E TO PC HOST INTERCONNECTING CABLE</b>                    | <b>6</b>  |
| <b>CONNECTING BOARD WITH HOST</b>                                       | <b>6</b>  |
| STEP 1: IDENTIFICATION OF USB TYPE-C CONNECTOR                          | 7         |
| STEP 2: INSERTION OF USB TYPE-A TO TYPE-C CABLE IN USB TYPE-C CONNECTOR | 7         |
| STEP 3: CONNECTING BOARD TO HOST                                        | 7         |
| ENSURING DEVICE IS CONNECTED TO HOST IN WINDOWS FROM DEVICE MANAGER     | 9         |
| ENSURING DEVICE IS CONNECTED TO HOST IN WINDOWS FROM E-CAMVIEW          | 10        |
| ENSURING DEVICE IS CONNECTED TO HOST IN LINUX FROM TERMINAL             | 10        |
| ENSURING DEVICE IS CONNECTED TO HOST IN LINUX FROM QTCAM                | 11        |
| <b>TROUBLESHOOTING</b>                                                  | <b>12</b> |
| <b>FAQ</b>                                                              | <b>13</b> |
| <b>WHAT'S NEXT?</b>                                                     | <b>16</b> |
| <b>GLOSSARY</b>                                                         | <b>17</b> |
| <b>SUPPORT</b>                                                          | <b>19</b> |

# Introduction to See3CAM\_130E

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See3CAM\_130E is a 13MP, color, UVC compliant, USB 3.1 Gen 1 SuperSpeed autofocus camera with Type-C connector from e-con Systems, a company with over two decades of experience in designing, developing, and manufacturing OEM cameras. It is provided with a reversible plug-and-play Type-C connector interface.

This 13MP color camera is a one-board solution containing an autofocus camera module with a 1/3.2" AR1335 CMOS image sensor from onsemi™ along with a USB 3.1 Gen 1 interface for connecting to a host PC through a Type-A to Type-C legacy cable with reversible cable detection. It can stream uncompressed VGA at 120 fps and 60 fps, HD at 60 fps and 30 fps (720p60, 720p30), 960P at 60 fps and 30 fps, FHD at 60 fps and 30 fps (1080p60, 1080p30), 1440P at 45 fps and 22.5 fps, 2880P (2880 x 2160) at 20 fps and 10 fps, 4K at 15 fps and 7.5 fps (UHD and QFHD) UYVY formats. This can also stream the uncompressed 13 MP at 9 fps and 4.5 fps when connected to the USB 3.1 Gen 1 host PC.

This camera also streams compressed MJPEG VGA at 120 fps, HD at 60 fps (720p60), 960P at 60 fps, FHD at 60 fps (1080p60), 1440P at 60 fps, 2880P (2880 x 2160) at 30 fps, 4K (UHD and QFHD) at 30 fps and the compressed MJPEG 13 MP at 20 fps.

See3CAM\_130E is backward compatible with USB 2.0 host ports and does not require special camera drivers to be installed in the host PC. When connected to USB 2.0 host ports, the camera supports all the resolutions and at lower frame rates. This camera will be compatible with the native UVC drivers of Windows and Linux Operating Systems (OS). e-con Systems also provides a sample application that demonstrates some of its features. However, this camera can utilize any DirectShow application, such as Skype.

This document describes how to connect the See3CAM\_130E board with a USB 3.1 Gen 1 host PC.

## Prerequisites

For Windows host, to view the preview in MJPEG format, MainConcept Decoder must be installed.

## Hardware Requirements

The hardware requirements are a Desktop or Laptop with a USB 3.1 Gen 1 or 2.0 port.

## Software Requirements

The software requirements are OSes with e-CAMView for Windows or QtCAM for Linux, or any standard camera application. The OSes are:

- Windows 10 and Windows 11
- Ubuntu 18.04(64-bit), Ubuntu 20.04. Ubuntu 22.04

## Parts Supplied

The See3CAM\_130E kit is supplied with the following parts:

- See3CAM\_130E Board
- USB Type-A to Type-C Cable

You can find these parts in the kit, as shown in the below figure.



Figure 1: Parts Supplied in Kit

## Description

See3CAM\_130E is a one-board solution of size 80 mm x 15 mm. This camera board is based on an AR1335 image sensor from onsemi™ along with an Image Signal Processor (ISP) and has a USB interface and a USB Type-C connector (Flip detection logic only). This See3CAM\_130E is a Ready-to-Manufacture camera board with all the necessary firmware built-in and compatible with the USB Video Class (UVC) version 1.0 standard. You can integrate this camera into the products, and this helps to cut short the Time-to-Market. This camera board is UVC compatible and this will

work with the standard drivers available with Windows and Linux OS. There is no need for any additional driver installation. The front view of See3CAM\_130E is shown below.



Figure 2: Front View of See3CAM\_130E

# Setting Up See3CAM\_130E

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This section describes how to connect See3CAM\_130E to the PC. The See3CAM\_130E is supplied with a USB 3.2 Gen 1 Type-A to Type-C cable to connect to the USB Type-A host port.

The following sections describe the setting up of See3CAM\_130E.

- [See3CAM\\_130E to PC Host Interconnecting Cable.](#)
- [Connecting Board with Host.](#)
- [Ensuring Device is connected to Host in Windows from Device Manager.](#)
- [Ensuring Device is connected to Host in Linux from Terminal.](#)
- [Ensuring Device is connected to Host in Linux from QtCAM.](#)

## See3CAM\_130E to PC Host Interconnecting Cable

The See3CAM\_130E camera is connected to the PC by the USB 3.2 Gen 1 Type-A to Type-C cable provided by e-con Systems.

The USB 3.2 Gen 1 Type-A to Type-C cable is shown in the below figure.



Figure 3: USB Type-A to Type-C Cable

## Connecting Board with Host

Please follow the below steps to connect the See3CAM\_130E board with a PC or Laptop.

- Step 1. [Identification of USB Type-C Connector](#)  
Step 2. [Insertion of USB Type-A to Type-C Cable in USB Type-C Connector](#)  
Step 3. [Connecting Board to Host](#)

## Step 1: Identification of USB Type-C Connector

The location of the USB Type-C connector on See3CAM\_130E is shown below.

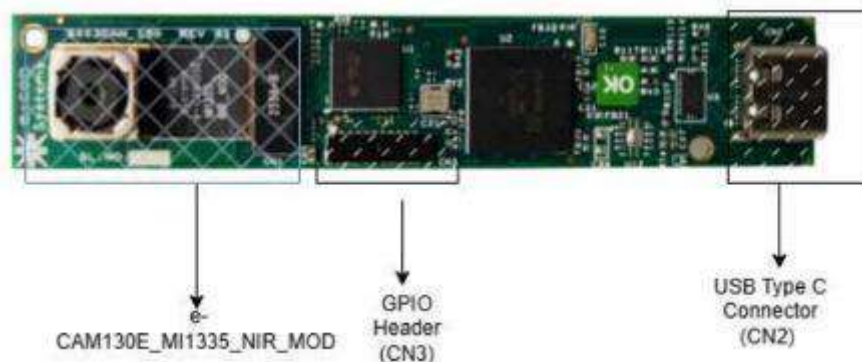


**Figure 4:**  
Location of  
USB Type-C  
Connector

## Step 2: Insertion of USB Type-A to Type-C Cable in USB Type-C Connector

The USB Type-A to Type-C cable provided by e-con Systems must be inserted with a USB Type-C connector, as shown below.



**Figure 5:** USB Type-A to Type-C Cable inserted in USB Type-C Connector

## Step 3: Connecting Board to Host

Identify a USB 3.1 Gen 1 port. The port that has the logo below is the USB 3.1 Gen 1 port.



**Figure 6:** SuperSpeed USB 3.1 Gen 1 Logo

The USB Type-A to Type-C cable must be inserted into the SuperSpeed USB 3.1 Gen 1 port of the PC or Laptop, as shown below.



**Figure 7: USB Type-A to Type-C Cable-Host Side**



**Figure 8: Connecting USB Type-A to Type-C Cable to SuperSpeed Port**

After the insertion of USB Type-A to Type-C Cable with USB Type-C connector on the board and USB Host, the LED (D1) will glow in Red color. This indicates that the board is powered ON, as shown below.

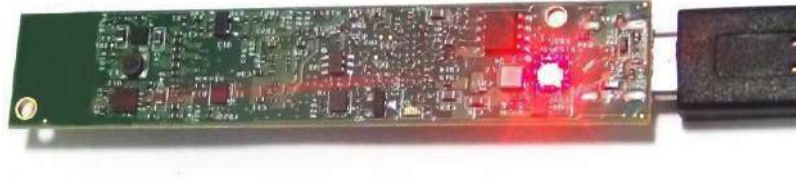


**Figure 9: Status LED indicating Board Powered ON**

After selecting the See3CAM\_130E device in the e-CAMView application, the LED (D2) glows Green in color. This indicates that the camera is in streaming condition, as shown below.



**Figure 10: Status LED indicating Camera Streaming**

### Ensuring Device is connected to Host in Windows from Device Manager

After the insertion of the board to the Host, you must confirm that See3CAM\_130E is properly connected to the Host from Imaging devices.

Go to **Control Panel > System and Security > Device Manager > cameras > See3CAM\_130E**, as shown below.

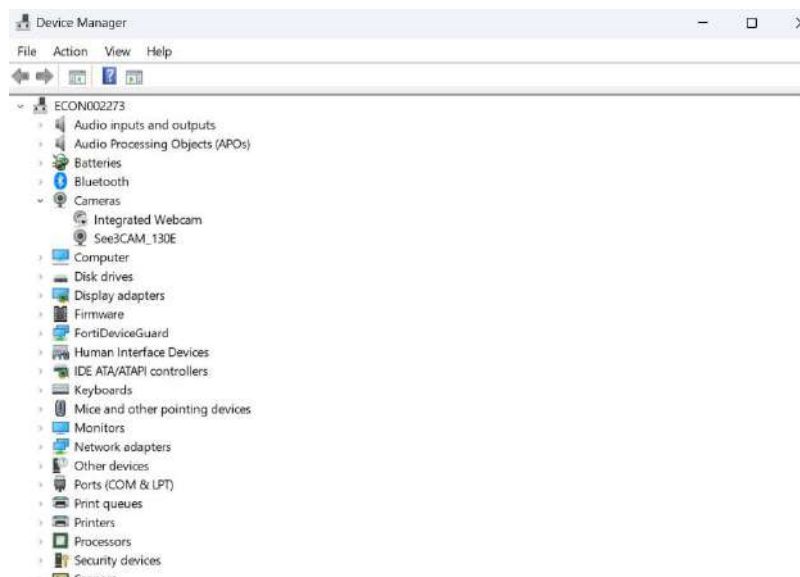


Figure 11: Imaging Devices showing See3CAM\_130E connected to Host

If you notice **See3CAM\_130E** listed under **Imaging devices**, then the board is properly connected to the Host.

### Ensuring Device is connected to Host in Windows from e-CAMView

After the insertion of the board to the Host, you must confirm that See3CAM\_130E is properly connected to the Host from e-CAMView.

Open the e-CAMView application and select the **Devices** menu. See3CAM\_130E must be listed as shown below.

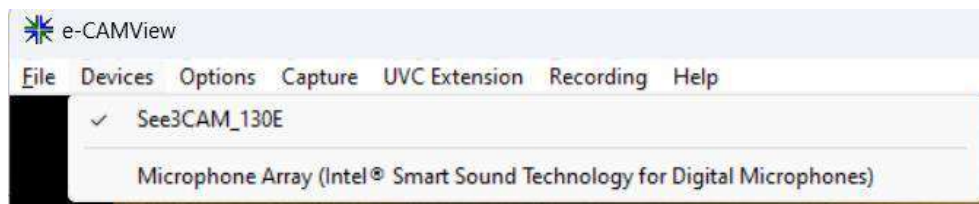


Figure 12: e-CAMView Displaying See3CAM\_130E connected to Host

If you notice **See3CAM\_130E** listed under the **Devices** menu, then the board is properly connected to the Host.

### Ensuring Device is connected to Host in Linux from Terminal

The steps to confirm that See3CAM\_130E is properly connected to the host are as follows:

1. Connect the device to the PC which supports the Ubuntu versions.
2. Open the Terminal.
3. Enter the following command to display the details of the device.

```
$ dmesg
```

You can view the details of the device as shown in the below figure.

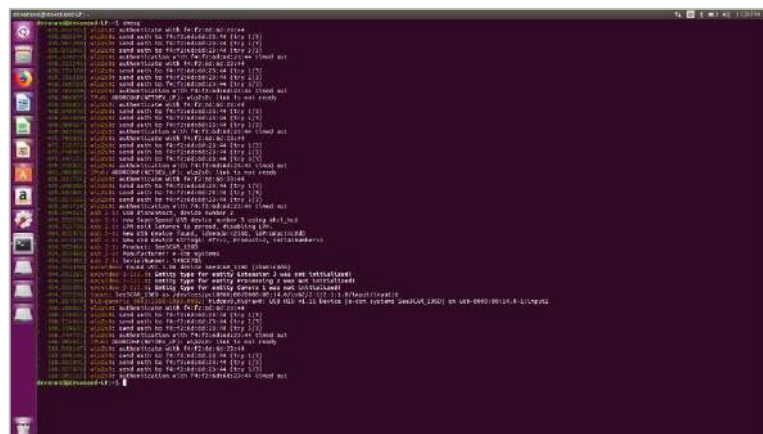


Figure 13: Imaging Devices showing See3CAM\_130E connected to Host

If you notice that the **See3CAM\_130E** is displayed in the product name, then the board is properly connected to the Host.

### Ensuring Device is connected to Host in Linux from QtCAM

The steps to confirm that the See3CAM\_130E is properly connected to the host are as follows:

1. Open **QtCam** application.
2. Go to **Device Connected** drop-down list, and in the drop-down list, you can view See3CAM\_130E, as shown in the figure below.

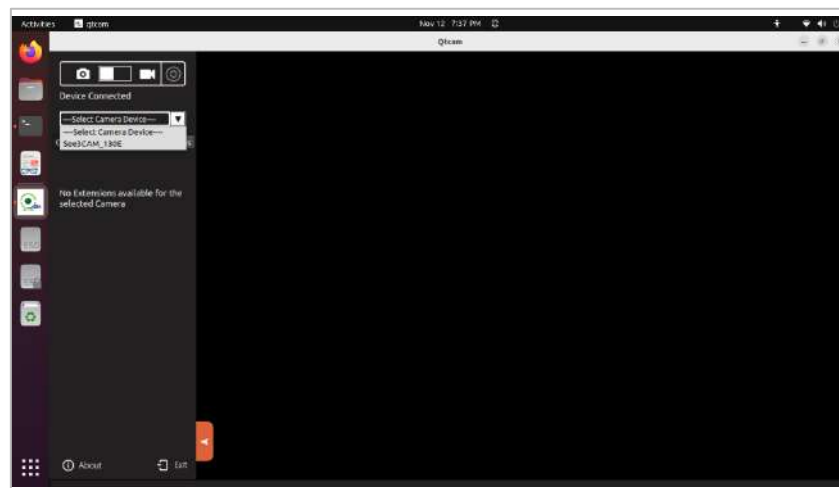


Figure 14: Imaging Devices showing See3CAM\_130E connected to Host

If you notice **See3CAM\_130E** listed under the **Device Connected** drop-down list, then the board is properly connected to the Host.

# Troubleshooting

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

**The device is connected, and the power indication LED is OFF or switching between RED and OFF states.**

This is a known issue. It seems like the device does not receive proper power input. You need to check the cable or USB connector integrity. If a USB Hub is used, use external power.

**The device is connected, but the power indication LED is RED.**

The device is powered up and ready to stream image data. To start streaming, you need to use e-CAMView, QtCAM, or any standard streaming application.

**The device is connected, but the indicator LED is RED, and it is not listed in the application or device manager.**

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

**The device is connected, streaming with GREEN LED showing frequent or intermittent blinks. Sometimes, frame corruption is seen in the streaming window.**

This is a known issue. It seems like there is a bandwidth limitation in the USB host. This may occur when multiple cameras are connected to a single USB host or in USB hosts of less powerful embedded boards. Visit the blog <https://www.e-consystems.com/blog/camera/?p=1720> for more information on USB practical bandwidths.

- 1. I purchased the product, and it arrived today. But how can I get the software and all the necessary documents to access this camera?**

Once you receive the product, the e-con Systems operations team will send you the confirmation email with the login credentials.

- 2. I am unable to log in using the login credentials.**

The login credentials might have expired. Please write to [techsupport@e-consystems.com](mailto:techsupport@e-consystems.com) with your requirements in detail to get immediate support.

- 3. Where could I get the latest firmware for the camera that I have purchased from e-con Systems?**

Please download the latest firmware from the [Developer Resources](#) website.

- 4. While attempting to download documents from the e-con Systems website, a particular download link is not working.**

Please write to [techsupport@e-consystems.com](mailto:techsupport@e-consystems.com) with your requirements in detail to get immediate support.

- 5. I am unable to register in e-con Systems website with my personal email ID. It is asking to enter corporate ID for registration.**

Yes, you are requested to register with a valid corporate email ID. e-con Systems will not spam you. e-con Systems will save your corporate email ID in the database to allow you to download any documents in e-con Systems website.

- 6. I tried to register with my corporate email ID while downloading the documents but failed.**

You are requested to register again using the link <https://www.e-consystems.com/auth/Account/Register>.

If you still face the same issue, then please write to [techsupport@e-consystems.com](mailto:techsupport@e-consystems.com) with your requirements, in detail to get immediate support.

- 7. I am unable to register with my corporate email ID using this <https://www.e-consystems.com/auth/Account/Register> link.**

Please write to [techsupport@e-consystems.com](mailto:techsupport@e-consystems.com) with your requirements in detail to get immediate support.

- 8. Can I get access to ISP registers?**

No. The option is not available by default but will be provided on a case-to-case basis with firmware customization.

**9. Can I get access to image sensor registers?**

Access to the image sensor registers is managed exclusively through the ISP. If you have specific requirements related to sensor image characteristics, we recommend working with our technical support team - [techsupport@e-consystems.com](mailto:techsupport@e-consystems.com).

**10. The frame rate is not consistent in the UYVY format. Can I fix it?**

Yes, the camera is designed to allow exposure to 66.66 milliseconds in auto exposure mode, and hence, the frame rates can drop to 15 fps. You can either set the maximum exposure limit using exposure compensation in the Extension Control menu or choose manual exposure to get the desired frame rates.

**11. The frame rate is not consistent in the MJPEG format. Can I fix it?**

Yes, but the frame rate may still be reduced due to the scene details or the frame size, which in turn affects the rendering capability from PC to PC. Performance improvement can be seen based on the graphic card or display adapter capability. To increase the frame rates, you can decrease Q-Factor or increase the De-Noise option in the Extension Control menu since both decrease the frame size and hence improve the frame rates.

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

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

**13. I need reliable operation when I connect multiple cameras to the same host or to an embedded board. Do I have options?**

Yes. All resolutions available in UYVY support multiple frame rates. You can switch it to a lower frame rate to improve stability. For MJPEG, reducing the Q-factor will improve stability in case of any issues. If it is still required to reduce the frame rates, contact [sales@e-consystems.com](mailto:sales@e-consystems.com).

**14. What support does e-con Systems provide along with the camera?**

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

**15. 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 any failed kit under warranty terms.

**16. 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.

## What's Next?

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After ensuring that the device is properly connected to the host, you need to refer to the *e-CAMView Streaming Application Installation Manual* to install e-CAMView, a sample DirectShow application that demonstrates the features of See3CAM\_130E.

**4K:** UHD or Industry name for 3840 x 2160 resolution.

**CMOS:** Complementary Metal Oxide Semiconductor.

**FHD:** Full HD (Industry name for 1920 x 1080 resolution).

**HD:** High Definition (Industry name for 1280 x 720 resolution).

**ISP:** Image Signal Processor.

**MJPEG:** Motion Joint Photographic Experts Group (A type of frame compression).

**UHD:** Ultra HD (Industry name for 3840 x 2160 resolution).

**USB:** Universal Serial Bus.

**USB 2.0:** Universal Serial Bus High Speed.

**USB 3.1 Gen 1:** Universal Serial Bus Super Speed.

**USB Type-C Connector:** USB Type-C (Industry name for USB 3.1) reversible connector.

**UVC:** USB Video Class.

**UYVY:** YUV422 16-bit image format with UYVY ordering.

**VGA:** Video Graphics Array (Industry name for 640 x 480 resolution).

### Revision History

| Rev | Date            | Description   | Author      |
|-----|-----------------|---------------|-------------|
| 1.0 | 29-October-2025 | Initial Draft | Camera Team |

## **Contact Us**

If you need any support on See3CAM\_130E 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>