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## See3CAM_12CUNIR



## Getting Started Manual

**Revision 1.0**
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## Contents

# See3CAM_12CUNIR

## 1   Revision History

| Rev | Date | Description | Author |
|-----|------|-------------|--------|
| 1.0 | 03-Oct-2014 | Initial Draft | Hardware Team |
|     |      |             |        |
|     |      |             |        |

## 2   Introduction

The See3CAM_12CUNIR is a 1.3Mega pixel, UVC Compliant, USB3.0 SuperSpeed camera from e-con Systems, a leading embedded Product Design Services company which specializes in the advanced camera solutions. The See3CAM is a new family of USB3.0 UVC SuperSpeed camera products launched by e-con.

The See3CAM_12CUNIR is an electronic rolling shutter, 1.3 Megapixel Monochrome Camera that is based on the Aptina AR0130CS CMOS image sensor. This See3CAM_12CUNIR is a UVC-compliant USB3.0 SuperSpeed Camera that is also backward compatible with USB2.0 host ports and does not require any special camera drivers. The See3CAM_12CUNIR is capable of supporting 720p60 (HD), 1280x960 resolution at 45 fps and 640x480 binned at 45 fps with the pixel depth of 12-bit monochrome data when interfaced to a USB3.0 host port.

The AR0130CS CMOS image sensor used in this See3CAM_12CUNIR is an Electronic Rolling Shutter, 1/3" optical form-factor, CMOS Image sensor from Aptina and this has superior low light performance and excellent Near IR performance. The low light sensitivity and the excellent NIR efficiency makes the See3CAM_12CUNIR camera as an ideal solution for Day/Night Vision Surveillance applications and NIR Imaging applications in medical and biological applications. The See3CAM_12CUNIR is supported with S-mount lens holder for enabling the users to choose the lens and any spectral filter as per their requirements.

e-con provides a sample DirectShow application, called e-CAMView, along with the See3CAM_12CUNIR camera. The e-CAMView is a typical DirectShow camera application, but customized to demonstrate some of the features of See3CAM_12CUNIR.

This document describes about how to connect the See3CAM_12CUNIR board with USB 3.0 host PC.

## 3   Scope

The scope of this document is limited to providing necessary overview of the See3CAM_12CUNIR camera board and how to use the same on a typical PC based environment.

## 4   Disclaimer

The specifications of See3CAM_12CUNIR camera board and instructions on how to connect this board with PC are provided as reference only and e-con Systems reserves the right to edit/modify this document without any prior intimation of whatsoever.

## 5   Description

The See3CAM_12CUNIR is a two board solution of size 30mm x 30mm USB3.0 SuperSpeed from e-con Systems. This camera board is based on AR0130 Image sensor from Aptina.

The See3CAM_12CUNIR is a USB 3.0 camera capable of streaming camera frames VGA (Cropped) , 720p @ 60   and 960p @ 45 fps when connected to USB3.0 host port by leveraging the full throughput of USB3.0. It also supports all the features with a USB 2.0 fallback. However, in USB 2.0, See3CAM_12CUNIR can stream VGA @ 30 fps, 720p @ 12 fps, 960p @ 9fps.
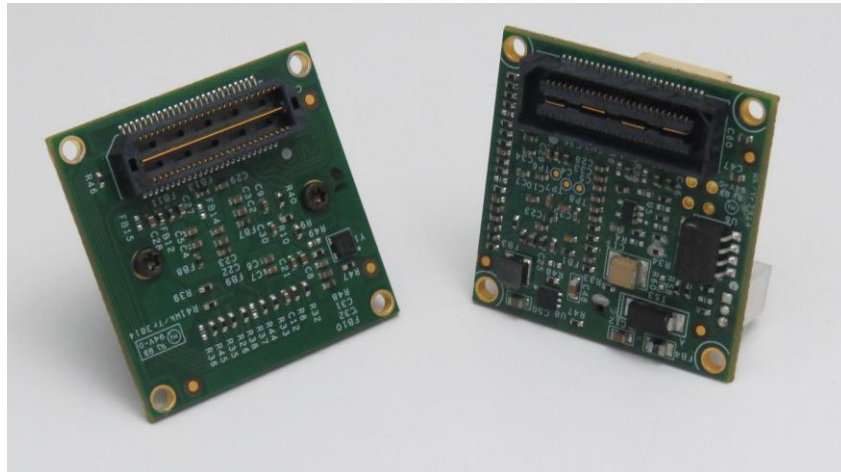
*Figure 1: See3CAM_12CUNIR*



*Figure 2: See3CAM_12CUNIR back to back.*

## 6   Setting up the See3CAM_12CUNIR

This section describes how to connect the See3CAM_12CUNIR to the PC. The See3CAM_12CUNIR camera is a USB 3.0 Superspeed client device. The See3CAM_12CUNIR camera is supplied along with a USB cable to connect to the USB Type-A host port.

The following sections describe the parts supplied in the kit.

1.   See3CAM_12CUNIR board
2.   USB3.0 Cable

## 6.1   See3CAM_12CUNIR to PC Host interconnecting Cable

The USB3.0 A to micro-B type cable is used to connect See3CAM_12CUNIR camera board to the PC will be supplied by e-con Systems.

*Figure 3: USB3.0 Cable*

## 6.2 Connecting the board with Host

Please follow the below steps to connect See3CAM_12CUNIR board with PC or Laptop.

### 6.2.1 Identification of USB3.0 Connector

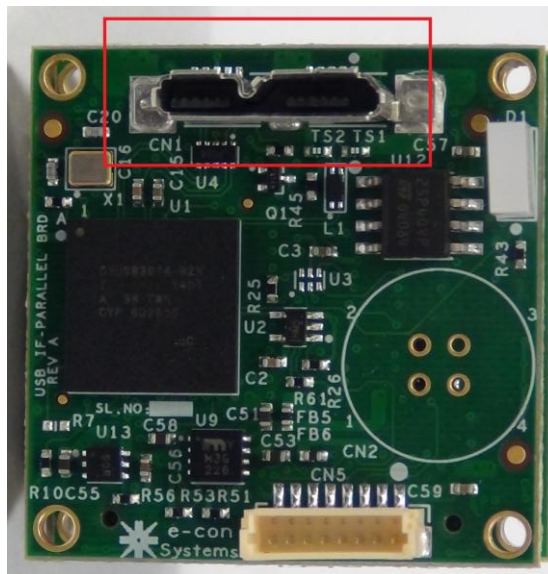The location of USB3.0 (CN1) connector on See3CAM_12CUNIR is shown in below figure



*Figure 4: Location of USB3.0 Connector*

### 6.2.2  Insertion of USB3.0 Cable in Connector

The USB3.0 Cable provided by e-con Systems with should be inserted with USB3.0 connector as shown in below figure.



*Figure 5: USB3.0 cable inserted in USB3.0 connector*

### 6.2.3  Connecting the board to Host

Identify a USB3.0 port. The port which has the below logo is USB3.0 Port.



*Figure 6: Superspeed USB 3.0 Logo*

The USB3.0 cable needs to be inserted to superspeed USB3.0 port of PC or Laptop.



*Figure 7: USB3.0 Cable – Host Side*

*Figure 8: Connecting USB3.0 Cable to Superspeed Port*

After the insertion of USB3.0 Cable with USB3.0 connector on the board and USB Host, the LED (D1) will glow in Red colour. This indicates that the board is powered ON.
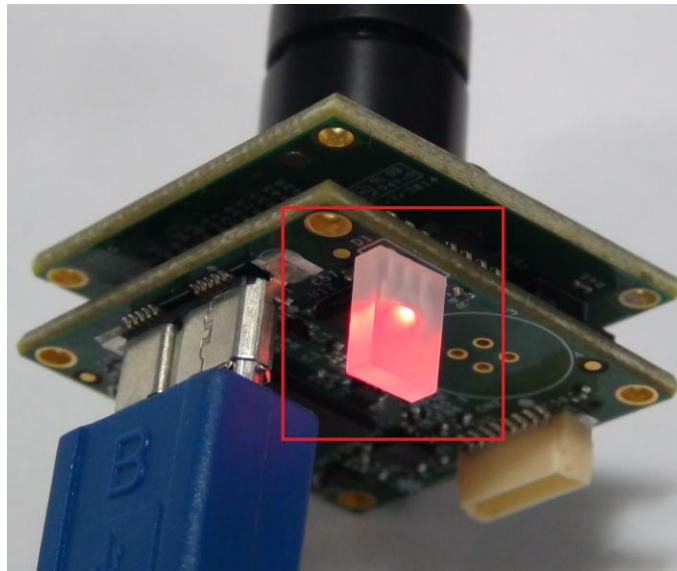

*Figure 9: Status LED indicating Board Powered ON*

After selecting the See3CAM_12CUNIR device in e-CAMView application the D1 LED glows in Green and Red (Bi-colour) colours.This indicates that the camera is in streaming condition.
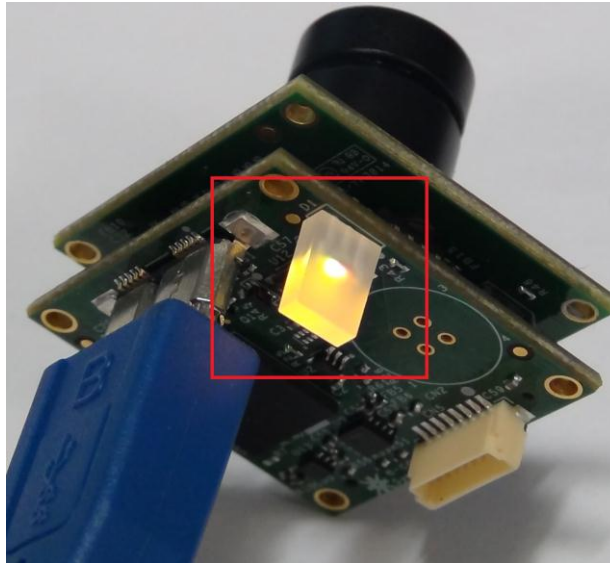


*Figure 10: Status LED indicating Camera streaming*

# 7   Conclusion

This document describes How to connect See3CAM_12CUNIR board to USB3.0 Host and how to get it working.