

CMOS Evaluation Hardware Quick Start Guide



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EVAl BOARD USER'S MANUAL

Before You Begin

Confirm that all of the required components are available:

- Evaluation Hardware and Supported Image Sensor.
The Evaluation Hardware consists of an Imager/FPGA board and a Lens Mount kit. A list of CMOS image sensors supported by the Evaluation Hardware can be found at www.onsemi.com.
- Sensor Studio II Software.
The most recent version can be downloaded at www.onsemi.com.
- Camera Link Frame Grabber (optional).
Camera Link provides an upload speed of 256 MB/sec. The CMOS Evaluation kit supports the Imperx FrameLink Express. This requires either an ExpressCard54 slot (laptop) or PCIe x1 slot (desktop). A PCIe to EC54 adapter can be used with desktops.
- USB.
USB2 and USB3 are supported.
- Computer.
Windows 7 64 bit. 2+ GHz processor, 8 GB RAM, USB 3.0/2.0 connection.
- Power Supply.
12 V DC, 2 A, with 2.1 mm center positive DC power jack.
- Cables.
For the Imperx Camera Link Frame Grabber two SDR to SDR cables are required. For USB 3.0, a 2 meter USB 3.0 cable with Type A on the host end and micro 3.0 on the hardware end is included.
- Lens.
A C/CS mount lens holder is provided with the kit. For larger optics, an F-mount is available in the optional Lens Mount Kit.
- Table-top Tripod. (recommended)

Install Software

Install Sensor Studio II software by running the appropriate "setup.exe" file. Check the boxes for installing the USB 2 and USB 3 drivers even if you want to use CameraLink. USB is the only interface for firmware updates.

Install Camera Link Frame Grabber (Optional)

With the computer turned off, install the optional FrameLink Express Frame Grabber hardware. When the computer is turned on, the new hardware will be detected. Install the Imperx software from the CD provided with that hardware. Run the file "FLExDvrManager.exe", and disable Camera Link status check for both Camera Link channels.

Assemble Evaluation Hardware

- Sensor, Lens Mount and Lens.
The CMOS evaluation Kit comes with a C/CS lens mount installed and a lens cover. If an appropriate C mount optic is not available, then the optional Lens Mount Kit F-mount adapter should be used.
- Plug in power and communications cables.
With the Evaluation Kit powered off, insert the Camera Link cables into the frame grabber or the USB cable into your PC. Insert the power plug into the receptacle on the Imager/FPGA board. Turn on the Power. Use DeviceManager to verify "Truesense USB3" or "FrameLink Express" is seen by the system.

Run Sensor Studio

- Launch Program.
Double click the Sensor Studio II desktop icon (Figure 1) to launch the software.



Figure 1.

- Select Plugin.
Click the plugin button (Figure 2). Then choose the KAC12040 plugin (Figure 3). An image display window and the control GUI will appear on the screen.



Figure 2.

EVBUM2251/D

- Connect to Hardware.
 - ◆ Select the “Connection” tab within the control GUI.
 - ◆ Select Camera Link or USB.
 - ◆ Click the Connect button.

The yellow light will change to green indicating that a connection has been established. The system is now ready to image. If there is a failure, the window will turn red with an error message. Confirm USB or the Frame Grabber has been properly recognized by the system using Device Manager.

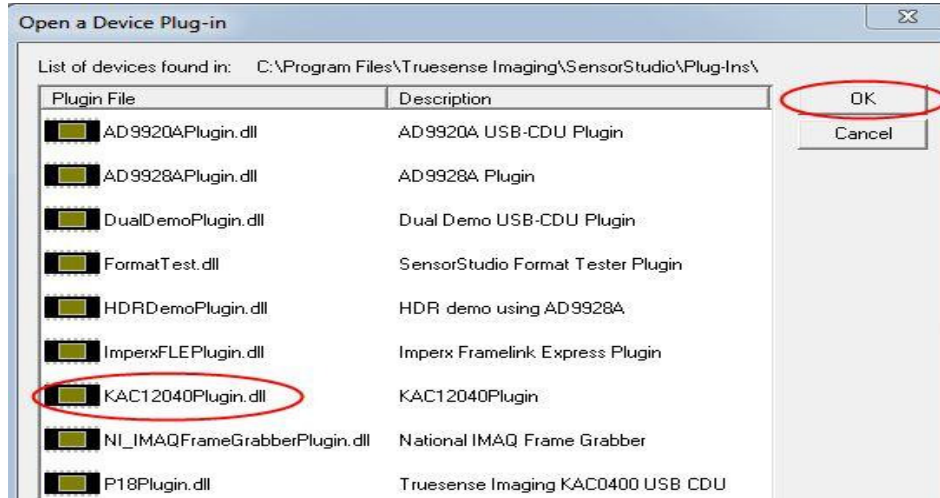



Figure 3.

Next Steps

Sensor Studio provides a number of controls to evaluate operation of the sensor, including image capture, processing, and characterization. Additional information on these controls is included in the Sensor Studio help system,

which is available from the HELP menu by selecting “SS2 and Python Help”.

For additional help in system setup, please contact ON Semiconductor at www.onsemi.com/imagesensors or by e-mail at is-support@onsemi.com.

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