EVBUM2258/D

PYTHON Family Sensor Evaluation Kit Quick Start Guide

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EVAL BOARD USER'S MANUAL

This guide will help you get up and running using the PYTHON Family of CMOS Image Sensors with the ON Semiconductor G3 Evaluation Hardware and Sensor Studio II Software.

Before You Start

- **Evaluation Hardware and Supported Image Sensor**
  Verify that you have the required hardware for the sensor being evaluated:
  - G3 FPGA board
  - Imager head board for the sensor being evaluated
  - Optional lens mount kit
- **Sensor Studio II Software**
  The most recent version can be downloaded at www.onsemi.com
- **USB**
  USB 2.0 and USB 3.0 are supported.
- **Computer**
  Windows 7 and Windows 10 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**
  2 meter USB 3.0 cable with Type A on the host end and micro 3.0 on the hardware end is included with the kit.
- **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 the software by running the appropriate "setup.exe" file, and check the boxes for installing the USB 3.0 drivers if they have never been installed.

Note that the 64-bit version of the USB3 driver currently is not digitally signed. See *ReadFirst_InstallerInstructions.pdf* document, which is part of the SensorStudio installer, for information on driver installation.

Consult PleaseReadBeforeInstall.pdf, which comes with the SensorStudio installer, for more information.

Assemble Evaluation Hardware

- Install image sensor on image sensor headboard making sure that the image sensor is in the proper orientation.
- If using lens mount kit, assemble the appropriate configuration for the optic you intend to use (C or F). (see instructions provided in the kit)
- Plug the headboard into the G3 Capture Card and secure with card guide clips provided.
- If using the 1/4−20 mounting feature on the G3 Frame, ensure that your mounting screw does not contact the bottom side of the FPGA circuit board.
- **Plug in power and communications cables**
  With the Evaluation Kit powered off, insert the USB cable into your PC. Insert the power plug into the receptacle on the Imager/FPGA board. Turn on the Power. Use Device Manager to verify "Truesense USB3" seen by the system.

Run Sensor Studio II

- **Shortcut**
  To properly configure the shortcut icon, right click, choose properties and then select the compatibility tab. Set the OS for your OS and enable "run as admin". The latter is needed if you install Sensor Studio II in the standard Program Files area which is owned by admin.
- **Launch Program**
  Double click the Sensor Studio II desktop icon to launch the software.
- **Select Plugin**

  Click the plugin button  . Then choose the correct plugin in the list:
  - Use PYTHON480 for PYTHON480 device
  - Use PYTHON48 for PYTHON 300/500/1300/2000/5000 devices
  - Use PYTHONxK for PYTHON 10K/12K/16K/25K devices
  - An image display window and the control GUI will appear on the screen

- **Connect to Hardware**
  - Select the “Connection” tab within the control GUI
  - Click the Connect button
  - The yellow indicator will change to green indicating that a connection has been established. The system is now ready to image. If there is a failure, the status box will turn red displaying an error message with more information.

Next Steps

Sensor Studio II 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 II 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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