EVBUM2294/D

PYTHON Image Sensor Evaluation Kits

ON Semiconductor®

www.onsemi.com

EVAL BOARD USER'S MANUAL

Description

ON Semiconductor PYTHON Image Sensor Evaluation Kits enable customers to easily and quickly evaluate the performance of the PYTHON CMOS Image Sensors without the need to develop a full camera design. When combined with ON Semiconductor Sensor Studio II software, this hardware allows full control of the image sensor's register settings and enables video recording, still image capture, and image analysis. With this level of programmability, CMOS sensor functionality such as global shutter, very fast frame rate, high NIR sensitivity, and multiple regions of interest can be rapidly evaluated.

Features

- Full Access to Image Sensor Register Settings
- Supports HDR Operation and ROI Readout
- USB Interface for Sensor Control, Image Capture, and Firmware Downloads
- Socketed Sensor* for Easy Sensor Replacement
- Integrated Tripod Mount (1/4−20 thread)
- Additional Headboards (sold separately) Allow Evaluation of Multiple PYTHON Products
- Lens Mount Kit (sold separately) Provides Support for C and F Mount Lenses, Includes IR Cut Filter for Color Imaging Evaluation

Kit Includes

- Image Capture Board with Integral Tripod Mount
- Headboard (Sensor installed & Lens Mount affixed)
- USB 3.0 Cable (2 meter length)
- Quick Start Guide

*Not applicable to PYTHON 480 kit

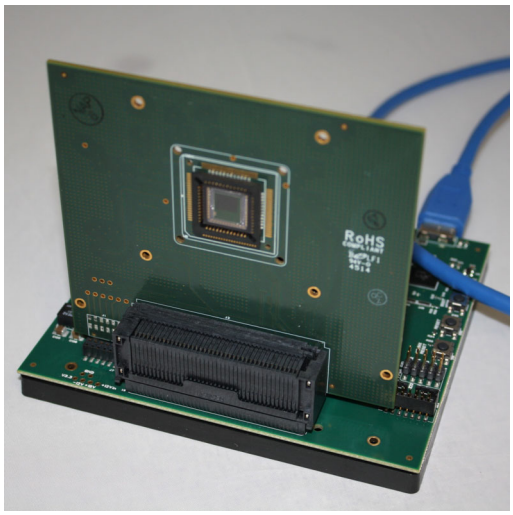

Figure 1. PYTHON Image Sensor Evaluation Board

GENERAL SPECIFICATIONS

Parameter	Typical Value
Hardware Interfaces	USB 3.0, USB 2.0
Typical Data Rate (USB 3.0)	Up to 300 Mb/sec (Varies with USB Adapter used)

KIT SPECIFIC SPECIFICATIONS

Evaluation Kit	PYTHON 480	PYTHON 1300	PYTHON 5000	PYTHON 25k
LVDS Lanes	1	4	8	32
Max Frame Rate, Full Resolution (fps)	120	168	82	35
Display Frame Rate, Full Resolution, USB 3.0 (fps)	62	26	6.8	1.6
On Board Buffer Capacity, Full Resolution (Frames)	256	64	32	8
Included Lens Mount	C mount	C mount	C mount	F mount
Compatible with Optional Lens Mount Kit	No	Yes	Yes	Yes

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ORDERING INFORMATION

Part Number	Description	Compatible Devices (Sold Separately)
NOIP1SN0480A−STI−A−GEVK	PYTHON 480 (SVGA) Monochrome Image Sensor Evaluation Kit (Image Sensor Included)	N/A
NOIP1SE0480A−STI−A−GEVK	PYTHON 480 (SVGA) Color Image Sensor Evaluation Kit (Image Sensor Included)	N/A
NOIP1SN1300A−QDI−A−GEVK	PYTHON 1300 (1.3 MP) Monochrome Image Sensor Evaluation Kit (Image Sensor Included)	PYTHON 300, PYTHON 500
NOIP1SN5000A−QDI−A−GEVK	PYTHON 5000 (5.3 MP) Monochrome Image Sensor Evaluation Kit (Image Sensor Included)	PYTHON 2000 LCC
NOIP1SN025KA−GDI−A−GEVK	PYTHON 25K (26.2 MP) Monochrome Image Sensor Evaluation Kit (Image Sensor Included)	PYTHON 10K, PYTHON 12K, PYTHON 16K

OPTIONAL HARDWARE ORDERING INFORMATION

Part Number	Description	Compatible Devices (Sold Separately)
NOIP1SN0480A−STI−HEAD−BD−A−GEVK	PYTHON 480 Monochrome Headboard (Image Sensor Included)	N/A
NOIP1SE0480A−STI−HEAD−BD−A−GEVK	PYTHON 480 Color Headboard (Image Sensor Included)	N/A
NOIP−48PIN−HEAD−BD−A−GEVB	48−Pin Headboard Only (Image Sensor Not Included)	PYTHON 300, PYTHON 500, PYTHON 1300
NOIP−84PIN−HEAD−BD−A−GEVK	84−Pin Headboard Only (Image Sensor Not Included)	PYTHON 2000 LCC, PYTHON 5000 LCC
NOIP−355PIN−HEAD−BD−A−GEVB	355−Pin Headboard Only (Image Sensor Not Included)	PYTHON 10K, PYTHON 12K, PYTHON 16K, PYTHON 25K
LENS−MOUNT−KIT−D−GEVK	Lens Mount Kit to Support C and F Mount Lenses (Includes IR Cut-Filter)	All PYTHON evaluation kits and headboards other than PYTHON 480

REQUIRED HARDWARE AND SOFTWARE

Host Computer

- 2 GHz processor, 8 GB RAM, USB 2.0 / 3.0 interface, Windows 7 and Windows 10 Operating System (64 bit)
- Sensor Studio II software. Available for download at www.onsemi.com.

For Maximum Speed

- Native USB 3.0 chipset

Other (User Supplied)

- +12 VDC, 2 Amp, power supply with 2.1 mm center positive DC jack
- Camera lens
- IR cut filter (required for evaluating color image sensors)
- Table-top tripod (optional)

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