EVBUM2552/D

KAE-0215x TEC Image Sensor Evaluation Kit

ON Semiconductor®

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Description

The ON Semiconductor KAE−0215x TEC image sensor evaluation kit enables customers to evaluate the performance of KAE−02150 and KAE−02152 Interline Transfer EMCCD image sensors that include an integrated thermoelectric cooler (TEC) without the need to develop a full camera design. When combined with ON Semiconductor SensorStudio software, the kit allows easy camera control such as VGA/CDS gains, black levels, integration time, electron multiplication factor and readout configuration (single / dual / quad). Image capture and analysis functions such as video recording, still image capture, gain merging and image analysis are also supported.

Separate part numbers are available to evaluate devices with either standard or enhanced NIR sensitivity in monochrome, color, and Sparse CFA configurations where available. Separate product configurations with an integrated TEC can also be evaluated using this hardware by purchasing individual image sensors. Please see ordering information for more details. Individual components of this kit are also available in an à la carte manner. Please contact your ON Semiconductor sales representative for more details.

US export controls apply to shipments of IT−EMCCD devices designated for destinations outside of the US and Canada. Please contact your ON Semiconductor sales representative for more details.

Features

- Three Operating Modes Supported:
  - Normal: All Signal Routed to Standard CCD Output
  - EM: All Charge Routed to Electron Multiplication Output
  - Mixed: Intra−scene Switchable Gain Routes Charge Based on Signal Intensity on a Per Pixel Basis
- USB Interface for Sensor Control, Image Capture, and Firmware Downloads
- Optional Camera Link Interface Supports Faster Display Rates

Kit Includes

- FPGA Capture Board with Base and Tripod Mount (1/4−20)
- Imager Board with Socketed Engineer Grade Image Sensor Installed
- C Type Lens Mount, No IR Cut Filter
- USB 3.0 Cable (2 meter Length)
- Cooling tower with TE controller interface
- Quick Start guide

Not included (required): Lens, Tripod, Power Supply, TEC Controller, Windows 7 and Windows 10 64 bit Computer

Not included (optional): Components to enable camera link interface (Microtronix A6287 interface board and 2 MDR−SDR cables)

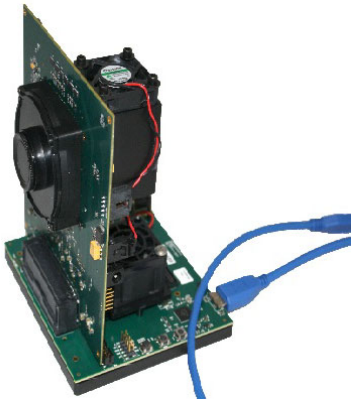

Figure 1. Evaluation Board Picture

Parameter	Typical Value
Hardware Interfaces	USB 3.0 Camera Link Medium
Typical Data Rate USB 3.0 Camera link Medium	 79 MB/sec 158 MB/sec
Sensor Output Pixel Rate AFE Data Rate	Analog 20 MHz LVDS 120 MHz
Sensor Frame Rate (fps) Full Resolution @ 20 MHz	single / dual / quad 7 / 12.2 / 25.2
Display Frame Rate (fps) Full Resolution USB 3.0 Full Resolution Camera Link	single / dual / quad 3.5 / 6.1 / 12.6 7.0 / 12.2 / 25.2
On Board Frame Buffer Capacity	64 frames
Optics	C type lens mount without IR cut filter. To use F mount, or IR cut filter for C mount, order optional lens mount kit mentioned in “Ordering Information”.

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ORDERING INFORMATION

Part Number	Description
KAE−02150−AB−SD−A−GEVK	KAE−02150 TEC image sensor evaluation kit, monochrome (image sensor included)
KAE−02150−FB−SD−A−GEVK	KAE−02150 TEC image sensor evaluation kit, color (image sensor included)
KAE−02152−AB−SD−A−GEVK	KAE−02152 TEC image sensor evaluation kit, monochrome (image sensor included)
KAE−02152−FB−SD−A−GEVK	KAE−02152 TEC image sensor evaluation kit, color (image sensor included)
KAE−02152−QB−SD−A−GEVK	KAE−02152 TEC image sensor evaluation kit, Sparse CFA (image sensor included)
LENS−MOUNT−KIT−E−GEVK	Lens mount kit. Includes C mount, IR cut filter for C mount, F mount.

REQUIRED HARDWARE AND SOFTWARE

Host Computer

- 2 GHz processor, 8 GB RAM, USB 3.0 interface, Windows 7 and Windows 10 64 bit Operating System
- SensorStudio software. Available for download at onsemi.com
- Camera lens
- IR cut filter (required for evaluating color image sensors)
- Table−top tripod (optional)

Other (User Supplied)

- +12 VDC, 2 Amp, power supply with 2.1 mm center positive DC jack
- TE Controller (tested with TE Technology models TC−48−20 and TC−720). See Quick Start Guide for connection information.

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