

TECHBRIEF

BIT-IMAGER

BitSim's modular evaluation camera platform

Bit-Imager is a prototype and evaluation platform intended to accelerate the development of customized cameras: Industrial, Medical, Security cameras and other for still Images, Video, Infrared, X-ray Camera etc. It can also be used as is.

The camera can be used as standard single lens camera as well as a 2D Stereo Camera for applications such as Distance measurements, Eye movement, 3D positioning et. al

A carrier card integrates a processor system (SOM-module) with a separate Image sensor board. The modular approach makes it simple to adapt for new sensors.

A standardized MIPI CSI-2 interface is available for attaching camera sensors. Other sensors with proprietary interface can also be attached.

The evaluation platform can be converted to a single board solution for a lowered unit cost.

High Speed interface are available to enable a quick RAW format image transfer to a host systems such as a PC – via USB3 or 1Gb Ethernet.

For applications with lower bandwidth interfaces, or self contained camera system with a limited need of communication, local processing is possible utilizing the onboard System on Chip (SoC) integrating and ARM processor and an FPGA.

SW Drivers are available for image interfaces through the embedded SoC platform to a host system such as a Windows PC.

The camera can be purchased as a platform or with the integrated single or dual sensors.



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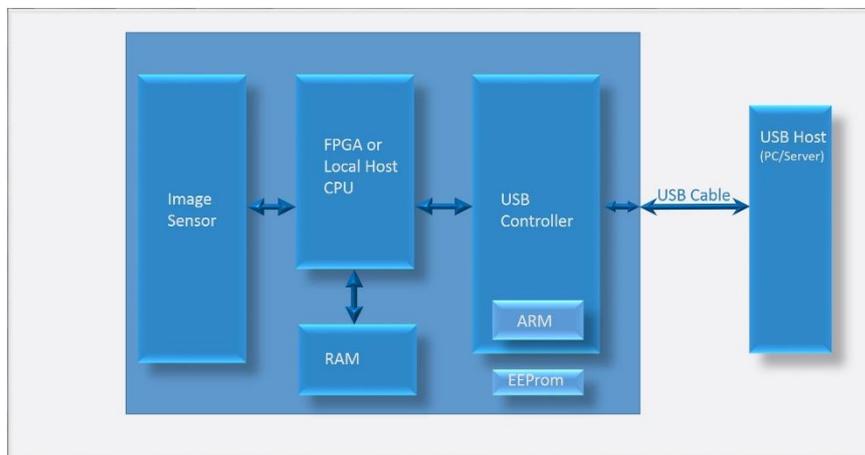
BitSim AB

www.bitsim.com

BitSim

Features

- New sensors can easily be evaluated thru a modular board design concept
- Dual Camera Interface connector
- SOM-module: Xilinx Zynq with integrated ARM A9 processor, 1 GB DDR3, 4 GB eMMC
- USB 3.1 interface 3 Gb/s
- Ethernet Interface 1 Gb/s
- Sony IMX249, 8 bits per pixel
- Resolution active part 1920 x 1200
- Option: Sony IMX174
- Streaming Data via HW buffer RAM (In FPGA)
- Calibration Flash for Camera parameters
- ARM processor for USB I/F
- USB 3.0/3.1 Interface
- Size 140 x 20 mm



Block Design of Bit-Imager

Deliverables

- Schematics
- Layout suggestion
- Embedded C code
- PC based Code (Windows)
- FPGA Interface block VHDL
- Test Environment
- Documentation

Other Design packages from BitSim

- **Bit-10GBE** 10 GBit/s Ethernet Interface
- **Bit- MIPI CSI-2** High Speed Camera MIPI Interface - 3.2 GBit/s
- **Bit-UDP** Internet UDP and IP protocols implemented in HW for high speed data transfers of Image data
- **Bit-Pump** Multiple Sensor 48 GBit/s bursts into 1GB Ethernet/USB 3.0
- **Bit-SaS** 32 bit high precision low power ADC embedded platform, ARM CPU, 64 GByte Flash, TCP/IP/Ethernet, SPI, I2C

- **Bit-Whisper** Low power IoT platform GPRS/ISM Radio/GPS on 38 x 44 mm card
- **ADC130** 130 MSa/s ADC on FMC card
- **ADDA** 4,8 GSa/s ADC and DAC on FMC card