OVMed®

OH0093 Advanced Class Medical Imaging Processing Unit product brief

Compact IPU With High Image Quality for Endoscope CCUs

OmniVision's OVMed® OH0093 Image Processing Unit (IPU) is an FPGA-based, imaging solution featuring advanced automatic exposure and gain control, RGB noise reduction, edge enhancement and RAW 8/10/12 image output. The OVMed® OH0093 IPU interfaces with our high-performance medical image sensors and can fit into an endoscope's camera control unit (CCU).

This IPU allows medical designers to leverage the benefits of our extremely small image sensors with easy integration into their systems, enabling a short time to market with high image quality.

Find out more at www.ovt.com.

OmniVision®

OVMed® OH0093

Applications

- Medical and Veterinary Endoscopes
- Security and Surveillance System
- Industrial Processing Cameras

Product Features

- Integrated design: sensor, processor bridge, ISP, and PC interface
- Small form factor to fit space-constrained equipment
- Easily adjustable system parameters with pre-defined buttons
- Advanced ISP delivers high quality images
- Ready-to-use Software Development Kit (SDK) to facilitate IP integration
- Seamless evaluation and build with customer equipment
- Market-ready, end-to-end solution
- Software compatibility with Windows, Linux, and Android platforms

Product Specifications

- Supports image size: 400 x 400, 200 x 200
- Image output formats: RGB, RAW, and YUV
- Sensor interface to 4 pin OV6946 mixed signal interface
- Output interface USB2.0 interface
- Current 300 mA (min >30 mA; max <500 ma)
- USB 5V power supply
- Supports AEC/AGC/AWB control
- Supports manual white balance
- Supports brightness/contrast adjustment
- Supports saturation adjustment
- Supports sharpness adjustment.
- Supports deFPN and de-noise function

Ordering Information

- **Contact Sales Rep**
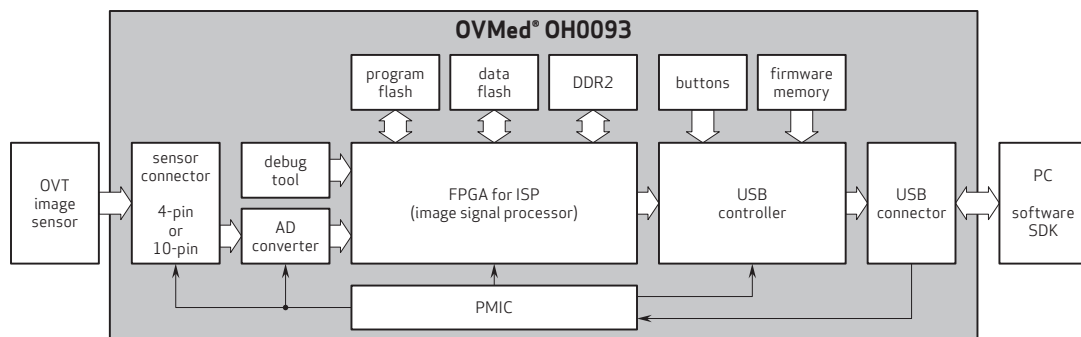 OVMed® ISP (advanced) with USB output

  Package Includes:
  - OmniVision camera AA module with OV6946 image sensor
  - PCB board for OV6946 interface, OV426 A/D converter and ISP
  - USB cable with USB mini connector
  - CD-ROM containing:
    - Installation program
    - OVMed_SDK_Install_Guide
    - OVMed_SDK_User_Guide
    - Demo programs with source code

Software Development Kit (SDK)

- The OVMed® OH0093 IPU comes with a Software Development Kit (SDK), a ready-to-use integration tool that enables customers to develop applications as needed. The SDK also provides a C++ callable function library. The SDK's main features include:
  - Provides system initialization and load setting
  - Provides interface for image output formats (RAW, YUV, RGB)
  - Provides interface for system controls for settings such as brightness, contrast, saturation, sharpness, and de-noise
  - Auto white balance (AWB) and Manual white WB control.
  - Customizable development of new Graphical User Interfaces (GUIs) and applications
  - No hardware modification or registration required
  - Supports customer-defined function buttons
  - Provides tutorial for API use with executable source code
  - Library provided in binary (DLL) format
  - Supports Windows OS

Mechanical Specifications

- Size L: 86 mm W: 35 mm
- Power switch: 1
- Pre-defined adjustment buttons: 7
- Input connector: 4-pin OmniVision AA Module; 10-pin Hirose connector
- Output USB connector: Mini USB

Functional Block Diagram

OVMed® OH0093: OVT image sensor → sensor connector (4-pin or 10-pin) → debug tool / AD converter → FPGA for ISP (image signal processor) → USB controller → USB connector → PC software SDK. program flash, data flash, DDR2, buttons, firmware memory connect to FPGA/USB controller. PMIC provides power.

Version 1.1, October 2019

OmniVision