

VC0323 USB 2.0 High-Speed PC Camera Processor with Built-in JPEG Encoder

General Description

VC0323 is Vimicro's latest platform for high quality PC camera products, exploring the increased bandwidth of USB 2.0 High-Speed (HS) protocol. With integrated sensor interface, 10-bit imaging signal processor, build-in JPEG encode engine, USB 2.0 controller and transceiver, VC0323 is designed as a cost-effective device replacing the complex and costly chip sets used in current webcam designs.

VC0323 comes with 48-pin QFN package at 7mm x 7mm, which is the best choice for embedded camera notebook.

Sensor Support	Off-the-shelf CMOS sensors up to 1.3M pixel resolution
Video Output Format	1.3M ,VGA, SIF, QSIF
Still Image Output	1.3M, VGA, SIF
Image Processor	Embedded
External DRAM	Not required
USB Protocol	USB 2.0 HS,FS
Max Frame/sec.	15@1.3M,30@VGA,60@SIF
Supply Voltage	3.3V
Power Consumption	< 300mW
Operating Temperature	0°C - 50°C (Ambient)



Chip Features

General Features

- ✧ Low cost, high performance single chip solution for VGA/1.3M USB 2.0 PC camera applications
- ✧ Video streaming up to 30fps at VGA resolution
- ✧ High quality 1.3M pixel still image capture
- ✧ No external DRAM required

CMOS Image Sensor Interfaces

- ✧ Support off-the-shelf CMOS sensors up to 1.3M pixel resolution
- ✧ 8bit/9bit/10bit sensor data interface

USB Features

- ✧ Integrated USB 2.0 controller and transceiver
- ✧ Suspend and Remote wakeup
- ✧ Programmable OEM USB parameters through EEPROM including product ID, vendor ID, product string, vendor string, product serial number string and max power of system

VC0323 USB 2.0 High-Speed PC Camera Processor with Built-in JPEG Encoder

Image Signal Processing

- ✧ 10-bit wide accuracy in color processing
- ✧ Auto Exposure (AE)
- ✧ Auto White Balance (AWB)
- ✧ Auto Gain Control (AGC)
- ✧ Auto bad pixel detection and cancellation
- ✧ Auto motion detection
- ✧ Auto flicker detection and cancellation
- ✧ Auto lens shading compensation
- ✧ Configurable image noise reduction
- ✧ Configurable image sharpness enhancement
- ✧ Configurable gamma and color correction
- ✧ Configurable brightness, color saturation, and hue
- ✧ Edge-adaptive CFA interpolation
- ✧ Back light compensation
- ✧ Support black and white sensor natively
- ✧ Up to 16 windows for statistical collection, exposure and backlight correction
- ✧ Embedded line buffers to capture, process and compress (MJPEG) 30fps VGA in YUV422 @ < 22:1 compression ratio over a USB 2.0 FS connection (< 62% bandwidth usage)
- ✧ Embedded line buffers to capture, process and compress (MJPEG) 15fps 1.3M in YUV422 @ < 6:1 compression ratio over a USB 2.0 HS connection(< 41% bandwidth usage)
- ✧ Histogram data (64 bins)

Embedded High Speed Micro-controller

- ✧ Pan and tilt motor control
- ✧ Digital Zoom
- ✧ Special Image Effect

Power

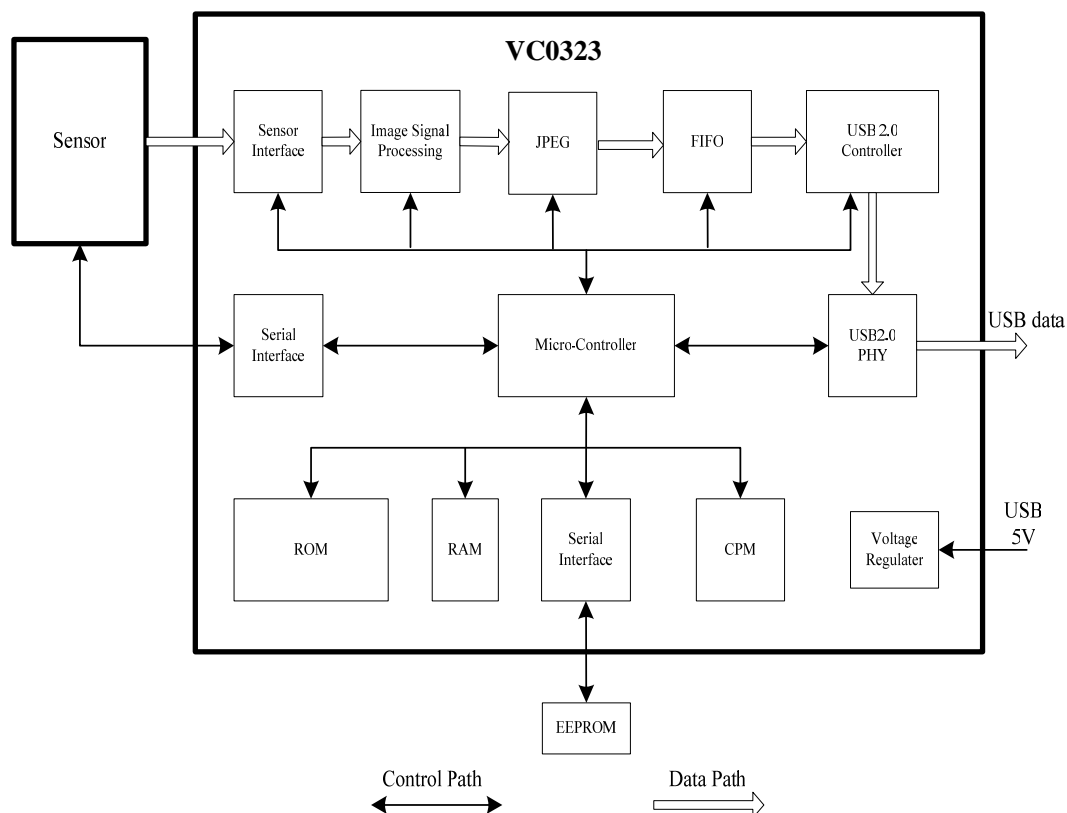
- ✧ 3.3V I/O, 1.8V core with on-chip regulator

Compliance

- ✧ USB Specification Rev.2.0 Compliance
- ✧ Microsoft WHQL compliance

VC0323 USB 2.0 High-Speed PC Camera Processor with Built-in JPEG Encoder

VC0323 Block Diagram



Contact Information

	Vimicro Corporation 15/F, Shining Tower No. 35 Xueyuan Road Haidian District, Beijing P. R. China 100083 Tel:86-10-68948888 Fax:86-10-689440705	Vimicro Corporation – USA 1758 N. Shoreline Mountain View, CA 94043 Tel: 1-650-966-1882 Fax: 1-650-966-1885 http://www.vimicro.com
--	--	--