JMB313 USB2.0 UVC WebCam Controller

Overview

JMB313 is a high-integration low power USB2.0 PC/NB camera controller. It incorporates a high speed USB2.0 transceiver, 3.3V to 2.8V/1.8V voltage regulator, a CMOS sensor interface, a SPI serial interface and low-power 8051 CPU.

JMB313 is fully compliant with USB Video Class (UVC) 1.1. With the flexible and programmable CMOS sensor interface, it can support a variety of sensor sources such as Omnivision, Micron/Aptina, Samsung and others, up to UXGA (1600 x 1200). JMB313 also provides real-time VGA-size preview mode up to 30 frames per second on different resolutions.

JMB313 offers the best-in-industry BOM reduction for notebook camera module. It supports EEPROM (2KB to 8KB) in addition to SPI serial flash and the built-in voltage regulator and USB crystal circuit can effectively reduce the BOM cost.

Overall

- 3.3V single power, 1.8V core power from internal regulator.
- Built-in regulator from 3.3V to 2.8V and 1.8V
- Lower power consumption (Operation < 55mA, Standby < 45mA & Suspend < 300uA)
- Built-in DP8051 (16KB code SRAM for easy update)
- Built-in JTAG interface for easy debugging.
- GPIO for LED indicator, shutter button, module flip detection, sensor power-down control, sensor reset, I2C (SCL & SDA) and SPI I/F (CS, SCLK, SI & SO)
- Built-in watch dog timer
- 32-pin LQFN (5mm* 5mm)

Sensor Interface

- Support YUY2 (8 bit), RGB (565) and RGB Bayer patter (8 bit)
- Down-sampling frames for flow control
- Video streaming up to 30fps@VGA, 9fps@SXGA ad 6fps@UXGA at high-speed operation
- VGA preview mode 30fps for SXGA & UXGA
- Output maximum 60MHz sensor clock
- Support clock divider (1/2, 1/4, …) for 30 fps series (30, 15, .5.. fps) and 25 fps series (25, 12.5, 6.25)

USB

- USB 2.0 interface
- USB Video Class 1.1 compliant
- Remote wake-up

- Support 3 Endpoints: Control x 1, Isochronous x 1 and Interrupt x 1

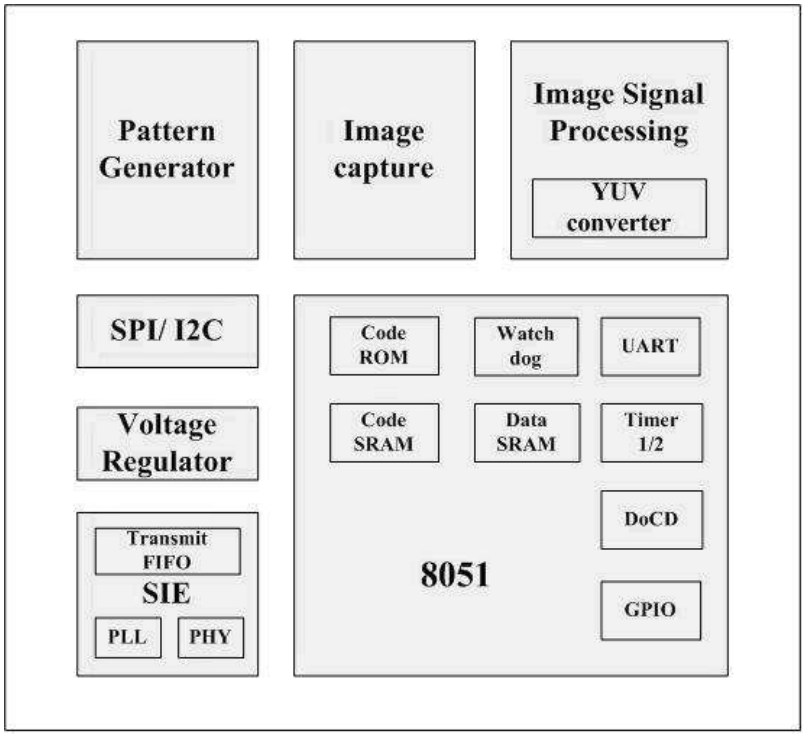
UVC

- Built-in UVC Camera Terminal Control
  - Auto-Exposure mode control
  - Auto-Exposure priority control
  - Exposure control
  - Privacy control
  - Pan and Tilt control
- Built-in UVC Color Processing Control
  - Backlight compensation control
  - Brightness control
  - Contrast control
  - Gain control
  - Power Line Control
  - Hue Control
  - Gamma Control
  - White Balance Control

Debug Interface

- UART debug interface to access sensor registers
- Easy download program with Xmodem protocol
- Support serial flash and EEPROM for code update

Block Diagram



Supporting Document

1	Product Brief
2	Data Sheet
3	Hardware Design Guide
4	Application Schematic

Contact Information

Department	Email
Sales	sales@jmicron.com
Tech. Support	fae@jmicron.com