



VGA USB Camera Chipset Solution

CMOS Image Sensor CX20490-11 and Camera Processor CX11646-11

Complete Camera Solutions

Conexant's capability to manufacture internal CMOS sensors, combined with our system-level expertise, enables us to create cost-effective, high-quality solutions for VGA PC cameras.

The CX20490-11 VGA sensor leads the industry in pixel size, sensitivity and dynamic range. The highly integrated CX11646-11 camera processor can transfer full-resolution VGA data across a USB 1.1 bus at 30 frames per second (fps).

Tethered VGA PC Camera

For tethered PC cameras, cost is the main consideration. Conexant lowers costs by integrating the entire camera into two chips. Our solution features single power-supply operation, integrated memory for compression, integrated USB enumeration, an integrated USB interface and direct support for all camera interfaces. Conexant takes the VGA PC camera to the next level, delivering full 30-fps operation at VGA resolution. By means of integrated motion JPEG compression and a software decoder, even the base system configuration delivers high-quality streaming video.

Dual-Mode VGA PC Camera

With the addition of minimal external components, the chipset can be configured as a VGA-resolution digital still camera. This dual-mode camera supports storage for 50 to 500 pictures, depending on picture size, compression ratio and external memory. This solution also supports video clips, audio clips, status display, buzzer and more.

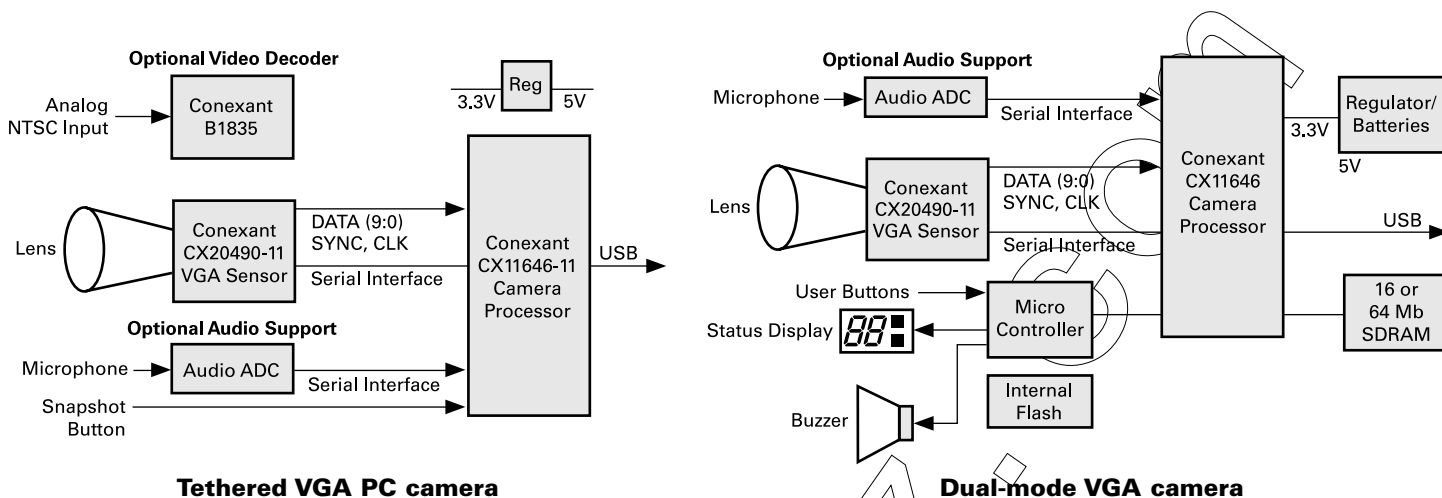


Distinguishing Features

- High-performance VGA CMOS sensor
- Configurable processor with feature set targeted for PC camera applications
- Designed for low-cost VGA USB cameras
- Complete system solution
- Schematic, layout, bill of materials and reference designs for many applications
- Software drivers for all major operating systems
- Development kit available

Typical Applications

The flexible architecture of the CX20490-11 VGA sensor and the CX11646 processor is ideal for numerous applications.



Product Features (CX20490-11)

- 1/5" color VGA sensor
- 640 x 480 active pixels
- 4.0 micron square pixel
- Active diagonal area of 3.2 mm
- On-chip 10-bit A/D converter
- Up to 30-fps VGA operation
- Progressive-scan readout
- Bayer RGB CFA with microlenses
- Programmable gain
- Programmable window of interest
- Selectable subsampling modes
- HSYNC and VSYNC outputs
- 10-bit parallel digital output
- Two-wire serial control
- On-chip timing generators
- Fully integrated on-chip voltage and current references
- Anti-blooming circuitry
- Single variable 2.7V to 3.3V supply
- 28-pin CLCC package
- 60 dB dynamic range
- Low power dissipation

Product Features (CX11646)

- 10-bit RGB Bayer sensor interface
- Up to 640 x 480 active pixel resolutions including CIF, QCIF, SIF and QSIF
- Programmable picture enhancement and color reconstruction algorithms
- Direct connection to USB 1.1 — no additional components required
- Motion JPEG compression with on-chip memory
- Dynamic bit-rate control for improved quality at 30-fps
- Up to 30-fps VGA operation
- ITU 656 YCbCr interface for connection to NTSC/PAL video decoders
- Serial audio ADC interface
- Sophisticated downscaling and image filtering
- Optional 16 mb/128 mb SDRAM support for dual-mode picture storage
- Power down and SDRAM refresh support
- Serial interface to low-cost, external microcontroller
- On-chip 3.3V to 1.8V voltage regulator (for internal digital logic)
- 80-pin PQFP package
- WDM and VFW drivers for Window 98, Windows 2000 and Windows ME
- Low power dissipation

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Order# 101495A

01-0031

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