KLT-X5PF-OV7740 V1.0

OmniVision OV7740 DVP并行接口 固定焦距 30万像素 VGA 摄像头模组
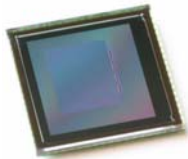

摄像头模组型号	KLT-X5PF-OV7740 V1.0
图像感光芯片	OV7740
焦距	1.02 mm
光圈	2.25
像素	640 x 480 (VGA)
可视角度	131°(D) 110°(H) 88°(V)
镜头类型	1/5 英寸
镜头尺寸	8.00 x 8.00 x 10.97 mm
模组尺寸	38.00 x 12.50 mm
模组类型	固定焦距
接口	DVP并行

配对连接器型号： FH12-24S-0.5SH
主板上的对应连接器。分开售卖。

OV7740/OV7241 VGA product brief

Ultra-High Sensitivity CMOS Image Sensor
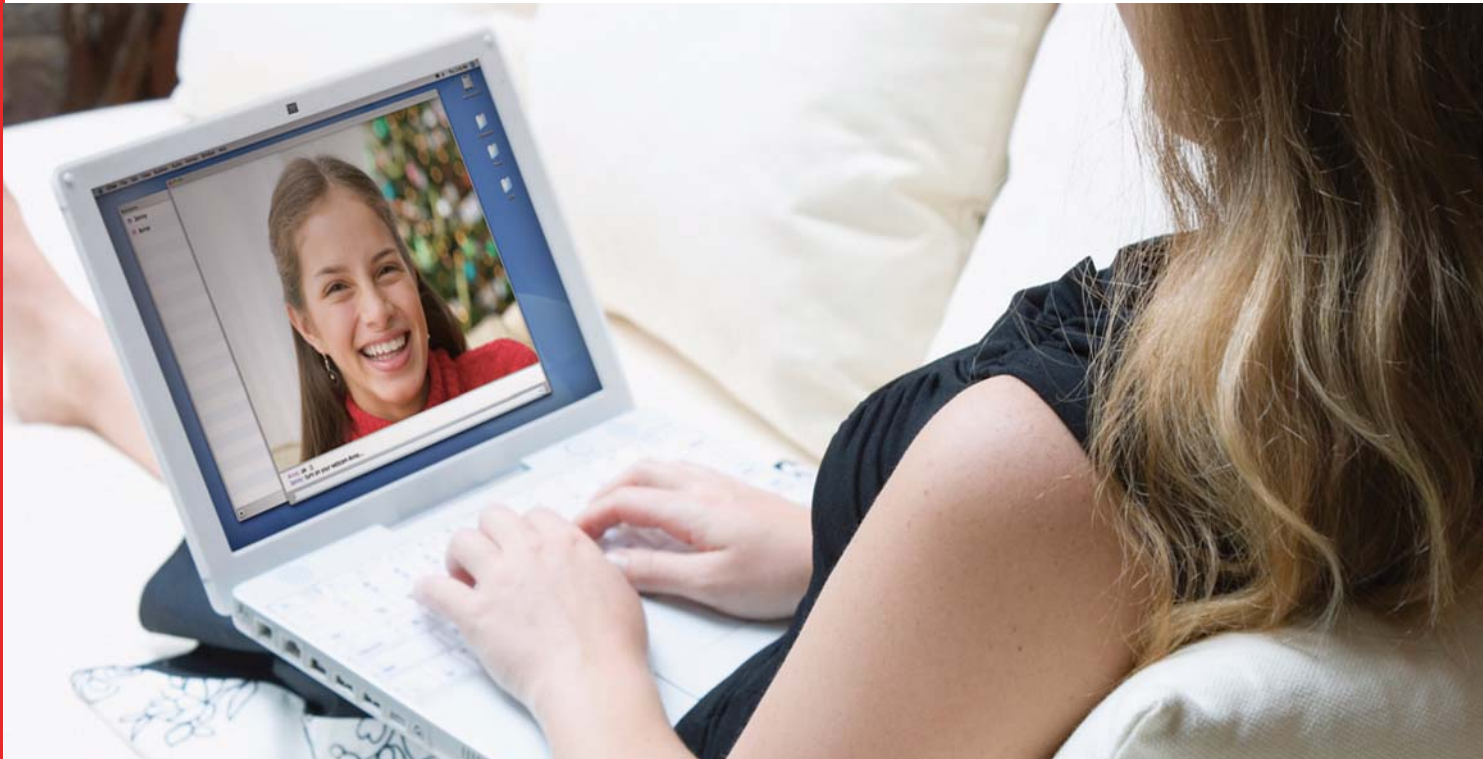
lead free
available in a lead-free package

The OV7740 (color) CameraChip™ sensor is a low power, high sensitivity VGA CMOS image sensor that provides the full functionality of a single-chip VGA camera in a small footprint.

Using OmniVision's proprietary OmniPixel3-HS™ technology, the 1/5-inch OV7740 boasts a best-in-class low light sensitivity of 6.0 V/lux-sec, making it ideal for integrated notebook cameras, as well as stand-alone PC webcams, security and gaming applications.

The OV7740 can operate at 30 frames per second (fps) in VGA resolution and 60 fps in QVGA resolution with complete user control over image quality, formatting and output data transfer. It supports a digital video parallel port, and provides full-frame, sub-sampled, windowed or scaled 8-bit/10-bit RAW RGB and 8-bit YUV images.

All required image processing functions including exposure control, gamma, white balance, color saturation, hue control, defective pixel canceling, noise canceling, etc., are programmable through the serial camera control bus (SCCB) interface.

In addition, the OV7740 uses proprietary technology to improve image quality by reducing or eliminating common lighting/electrical sources of image contamination, such as fixed pattern noise and smearing, to produce a clean and fully stable color image.
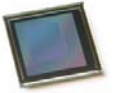
For storage purposes, the OV7740 also includes one-time programmable (OTP) memory.

Find out more at www.ovt.com.

Applications

- PC multimedia
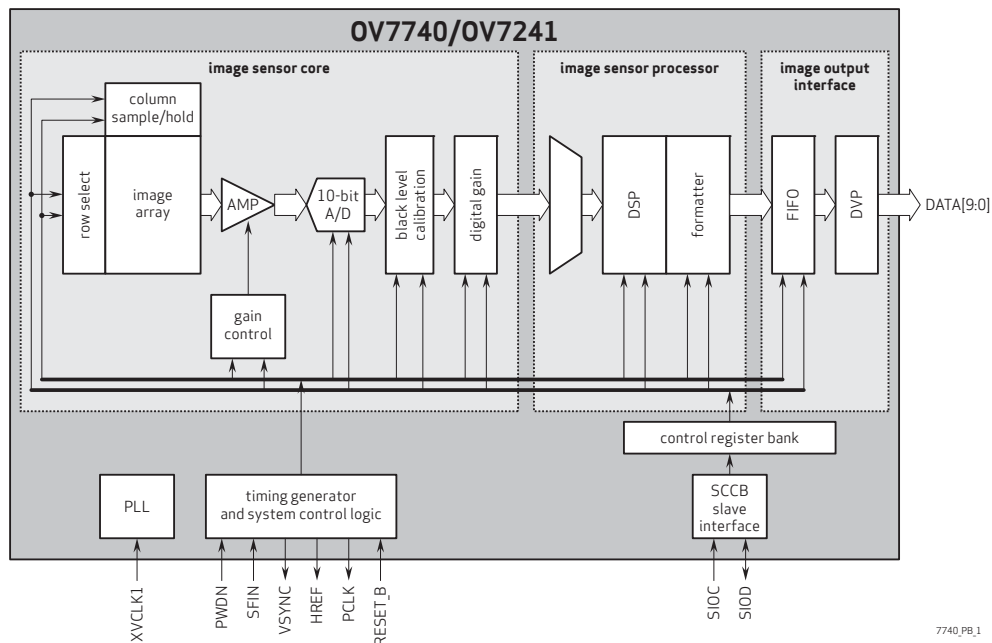- Games
- Security and Surveillance

OV7740/OV7241

Product Features

- support for output formats: RAW RGB and YUV
- support for image sizes: VGA, QVGA, CIF and any size smaller
- support for black sun cancellation
- support for internal and external frame synchronization
- standard SCCB serial interface
- digital video port (DVP) parallel output interface
- embedded one-time programmable (OTP) memory
- on-chip phase lock loop (PLL)
- embedded 1.5 V regulator for core

Product Specifications

- **array size:** 656 x 488
- **power supply:**
  - **core:** 1.5VDC ± 5%
  - **analog:** 3.0 - 3.6V
  - **I/O:** 1.7 - 3.47V
- **power requirements:**
  - **active:** 48 mA
  - **standby:** 20 µA
- **temperature range:**
  - **operating:** -30° C to 70°C junction temperature
  - **stable image:** 0° C to 50° C junction temperature
- **output format:**
  - 8-/10-bit raw RGB data
  - 8-bit YUV
- **lens size:** 1/5"
- **lens chief ray angle:** 25°
- **input clock frequency:** 6 - 27 MHz
- **max S/N ratio:** 38 dB
- **dynamic range:** 71 dB @ 8x gain
- **max image transfer rate:**
  - **VGA (640x480):** 30 fps
  - **QVGA (320 x 240):** 60 fps
- **sensitivity:** 6.0 V/lux-sec
- **shutter:** rolling shutter
- **maximum exposure interval:** 502 x t_{ROW}
- **gamma correction:** programmable
- **pixel size:** 4.2 µm x 4.2 µm
- **dark current:** 30 mV/s @ 60°C junction temperature
- **image area:** 2755.2 µm x 2049.6 µm
- **package dimensions:**
  - 4185 µm x 4345 µm

Functional Block Diagram

OV7740/OV7241

image sensor core — image sensor processor — image output interface

column sample/hold · row select · image array · AMP · 10-bit A/D · black level calibration · digital gain · DSP · formatter · FIFO · DVP · DATA[9:0]

gain control

control register bank

PLL · timing generator and system control logic · SCCB slave interface

XVCLK1 · PWDN · SFIN · VSYNC · HREF · PCLK · RESET_B · SIOC · SIOD

7740_PB_1

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