

OV9760 960p HD product brief



960p HD Video for Front-Facing Cameras in Smartphones and Tablets



available in
a lead-free
package

The OV9760 is a high performance CameraChip™ sensor that offers 960p high definition (HD) video to secondary cameras in high-end mobile devices. The sensor leverages OmniVision's powerful 1.75-micron OmniBSI-2™ pixel architecture to deliver 960p HD video at 30 frames per second (fps) or high quality 720p HD at 30 fps with additional pixels for electronic image stabilization (EIS).

The sensor is optimized for video conferencing applications, utilizing a 2x2 binning functionality that doubles the sensitivity in VGA resolution, while scaling reduces spatial artifacts and removes image artifacts around edges to produce crisp, clean color video.

The OV9760 supports a digital video parallel port or MIPI interface, and provides full-frame, sub-sampled or windowed 10-bit images in RAW RGB format with complete user control over formatting and output data transfer.

All required image processing functions, including exposure control, white balance, and defective pixel canceling are programmable through the SCCB interface. The OV9760 fits into a compact 4.3 x 4.1 mm package.

Find out more at www.ovt.com.

Applications

- PC Multimedia
- Games
- Tablets
- Cellular and Picture Phones
- Toys
- Digital Video Cameras

Product Features

- automatic black level calibration (ABLC)
- programmable controls for frame rate, mirror and flip, cropping and windowing
- image quality controls: lens correction and defective pixel canceling
- supports output formats: 10-bit RAW RGB (MIPI/DVP)
- supports horizontal and vertical subsampling
- supports images sizes: 1484x1116, 736x552, 368x276
- fast mode switching
- support 2x2 binning
- standard serial SCCB interface
- one-lane MIPI serial output interface/ DVP output
- embedded 4K bits one-time programmable (OTP) memory for part identification, etc.
- two on-chip phase lock loop (PLL)
- programmable I/O drive capability
- built-in 1.2V regulator for core
- built-in temperature sensor
- support alternate frame HDR

OV9760



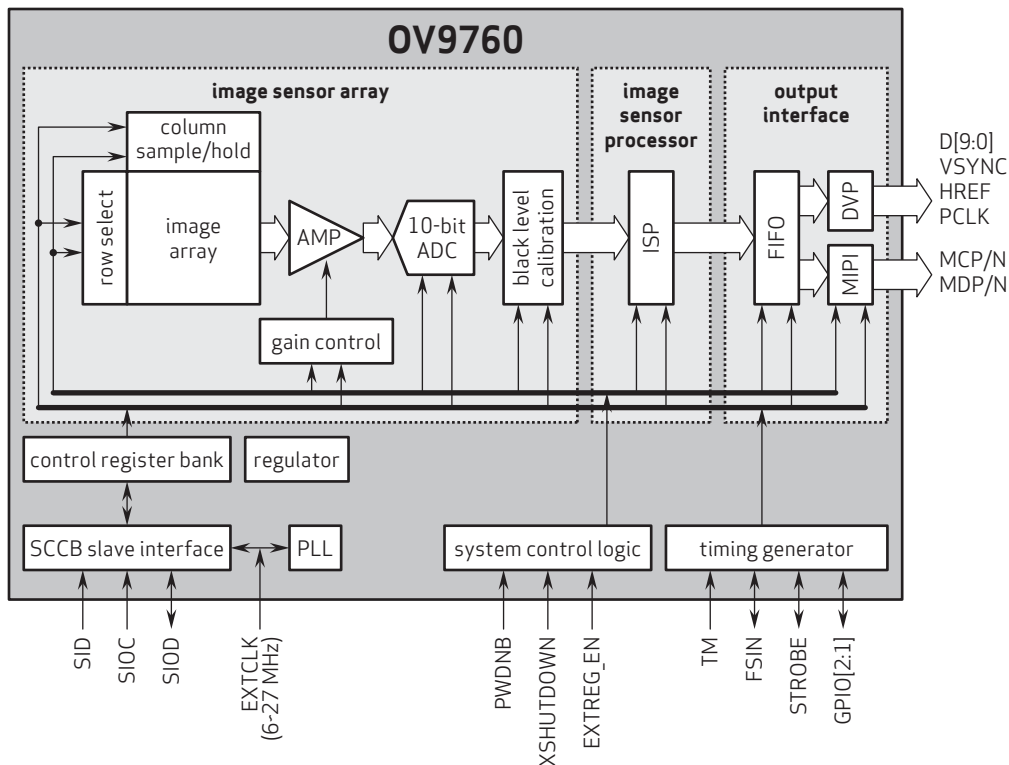
Ordering Information

- **OV9760-G04H**
(color, chip probing, 200 μm backgrinding, reconstructed wafer with good die)

Product Specifications

- **active array size:** 1484 x 1116
- **power supply:**
 - core: 1.2 VDC $\pm 5\%$
 - analog: 2.6 - 3.0V
 - I/O: 1.7 - 3.0V
- **power requirements:**
 - I_{DD-A}: 30 mA
 - I_{DD-A}: 38 mA
 - XSHUTDOWN: 5 μA
- **temperature range:**
 - operating: -30°C to 70°C junction temperature
 - stable image: 0°C to 50°C junction temperature
- **output formats:** 10-bit RAW RGB data
- **lens size:** 1/5"
- **lens chief ray angle:** 28.1° non-linear
- **input clock frequency:** 6 - 27 MHz
- **max S/N ratio:** 38.2 dB
- **dynamic range:** 72.8 dB @ 8x gain
- **maximum image transfer rate:**
 - 1484 x 1116 (960p + 15% EIS): 30 fps
 - 736 x 552: 60 fps
 - 368 x 276: 120 fps
- **sensitivity:** 1150 mV/lux-sec
- **scan mode:** progressive
- **maximum exposure interval:** 1144 x t_{row}
- **pixel size:** 1.75 μm x 1.75 μm
- **dark current:** 30 e⁻/s @ 60°C junction temperature
- **image area:** 2646 μm x 1998.5 μm
- **die dimensions:** 4300 μm x 4100 μm

Functional Block Diagram



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