



# OV16B10 16MP product brief



## High-Performance 16-Megapixel Image Sensor with PureCel®Plus-S Technology for Premium Smartphones



available in  
a lead-free  
package

OmniVision's OV16B10 is a high-performance, power-efficient, high-resolution image sensor designed for the next generation of flagship smartphones. Built on OmniVision's second-generation, 1.12-micron PureCel®Plus-S pixel architecture, the OV16B10 sensor features high full-well capacity, high-sensitivity imaging and phase-detection autofocus (PDAF) to deliver industry-leading performance to both single- and dual-camera applications.

Using zigzag high dynamic range (zHDR), the OV16B10 combines a long and short exposure in a single frame to increase dynamic range with minimum ghosting artifacts. The sensor utilizes a new PDAF architecture that improves sensitivity to enable accurate autofocus in low-light conditions.

The OV16B10 has a built-in feature that synchronizes the frames and supports context switching when it is used in dual-camera configurations, enabling image fusion while simplifying camera system architecture. Additionally, the OV16B10 features a gyro interface that reads and synchronizes the motion data from an external gyroscope for precise image stabilization.

The OV16B10 supports multiple resolution and frame-rate configurations, including 16-megapixel video at 30 frames per second (fps) with zHDR, 4K2K video at 60 fps, 1080p video at 120 fps, and 720p video at 120 fps.

Find out more at [www.ovt.com](http://www.ovt.com).



## Applications

- Smartphones
- Video Conferencing
- PC Multimedia

## Product Features

- automatic black level calibration (ABLC)
- programmable controls for:
  - frame rate
  - mirror and flip
  - binning
  - cropping
  - windowing
- support for dynamic DPC cancellation
- supports output formats:
  - 10-bit RGB RAW
- supports horizontal and vertical subsampling
- supports typical images sizes:
  - 4672 x 3504
  - 3840 x 2160
  - 1920 x 1080
  - 1280 x 720
- standard serial SCCB interface
- up to 4-lane MIPI TX interface with speed up to 2.4 Gbps/lane
- programmable I/O drive capability
- embedded 960 bytes of one-time programmable (OTP) memory for customer use
- gyro interface with 3-/4-wire SPI support
- sequential multi-frame HDR
- ZigZag HDR
- three on-chip phase lock loops (PLLs)
- programmable I/O drive capability
- built-in temperature sensor
- typical module size: 8.5 x 8.5 x -5.5 mm

# OV16B10



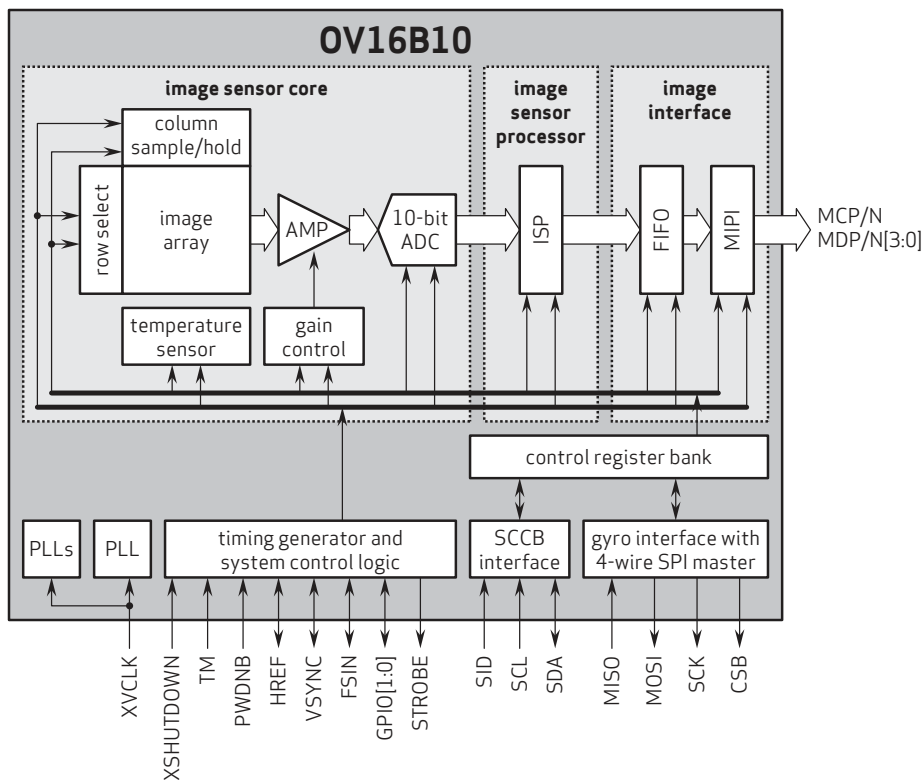
## Ordering Information

- OV16B10-GA5A**  
(color, chip probing, 150 μm backgrinding, reconstructed wafer with good die)

## Product Specifications

- active array size:** 4672 x 3504
- power supply:**
  - core: 1.05V
  - analog: 2.8V
  - I/O: 1.8V
- temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- output formats:** 10-bit RGB RAW, DPCM 10-8 compression
- lens size:** 1/2.76"
- lens chief ray angle:** 34.5° non-linear
- input clock frequency:** 6 - 64 MHz
- maximum image transfer rate:**
  - 4672 x 3504: 30 fps
  - 3840 x 2160: 60 fps
  - 1920 x 1080: 120 fps
- maximum exposure:** VTS - 8 lines
- minimum exposure:** 8 lines
- sensitivity:** 4300 e-/Lux-sec
- max S/N ratio:** 38 dB
- dynamic range:** 75 dB @ 16x gain
- scan mode:** progressive
- pixel size:** 1.12 μm x 1.12 μm
- image area:** 5249.66 μm x 3946.18 μm
- die dimensions:**
  - COB: 6324.3 μm x 4458.6 μm
  - RW: 6374.3 μm x 4508.6 μm

## Functional Block Diagram



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