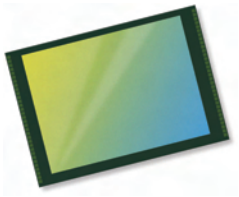


# OV16B10 16MP product brief

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

lead free

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.

OmniVision

# OV16B10

## 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

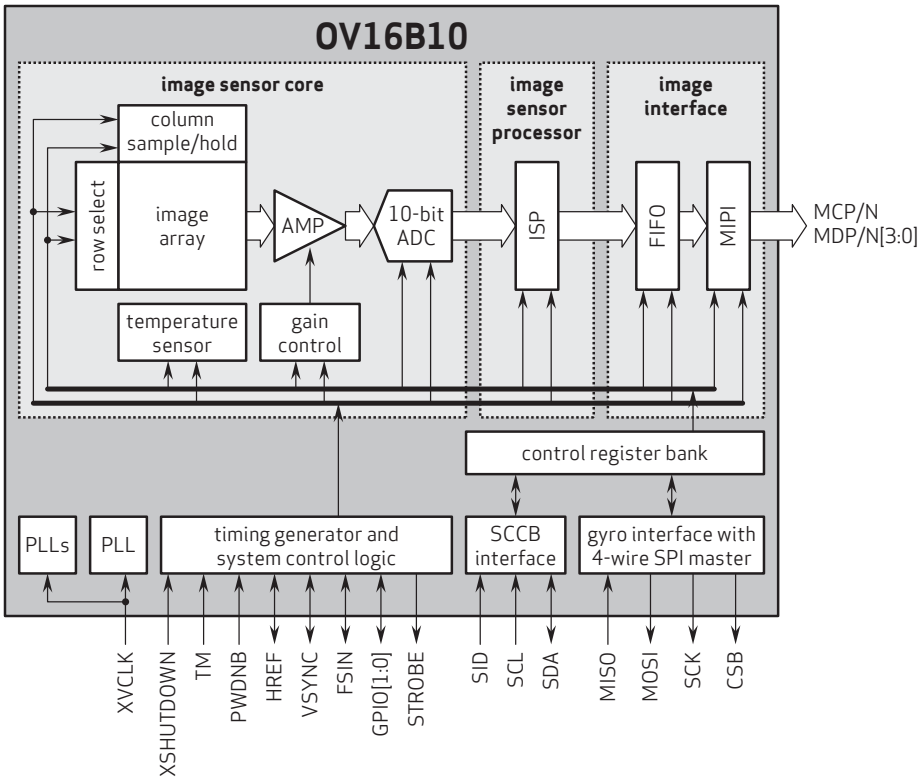
## Ordering Information

- **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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