OV80B

200 megapixel product brief

First 200MP Resolution Image Sensor with the World's Smallest 0.61-micron Pixel Size for High End Smartphones

OMNIVISION's OV80B is the world's smallest 200MP image sensor with pixel size at just 0.61 µm for smartphone cameras. The unique 16-cell binning of the OV80B delivers premium video and preview quality in 12.5MP mode, especially in low light. The OV80B is the first 200MP to offer 100% quad phase detection (QPD) technology for excellent fast autofocus performance.

The OV80B features the industry's first 16-cell binning capability for 4K2K video with 16 times the sensitivity. In low light environments it achieves 12.5MP performance with 2.44 µm-equivalent pixel size using near pixel 4x4 binning. An on-chip remosaic enables 50MP at 24 frames per second (fps) and 8k video at 30 fps with 1.22 µm-equivalent performance. The OV80B can also output 12.5MP at 30 fps with 3-exposure staggered HDR timing.

The OV80B supports CPHY, DPHY and dual DOVDD (1.8V and 1.2V).

Find out more at www.ovt.com.

OMNIVISION™

OVB0B

Ordering Information

- **OVB0BH0-GA5A-002A-Z** (color, chip probing, 150 µm backgrinding, reconstructed wafer with good die)

Applications

- mobile wide camera
- mobile ultrawide camera
- video conferencing

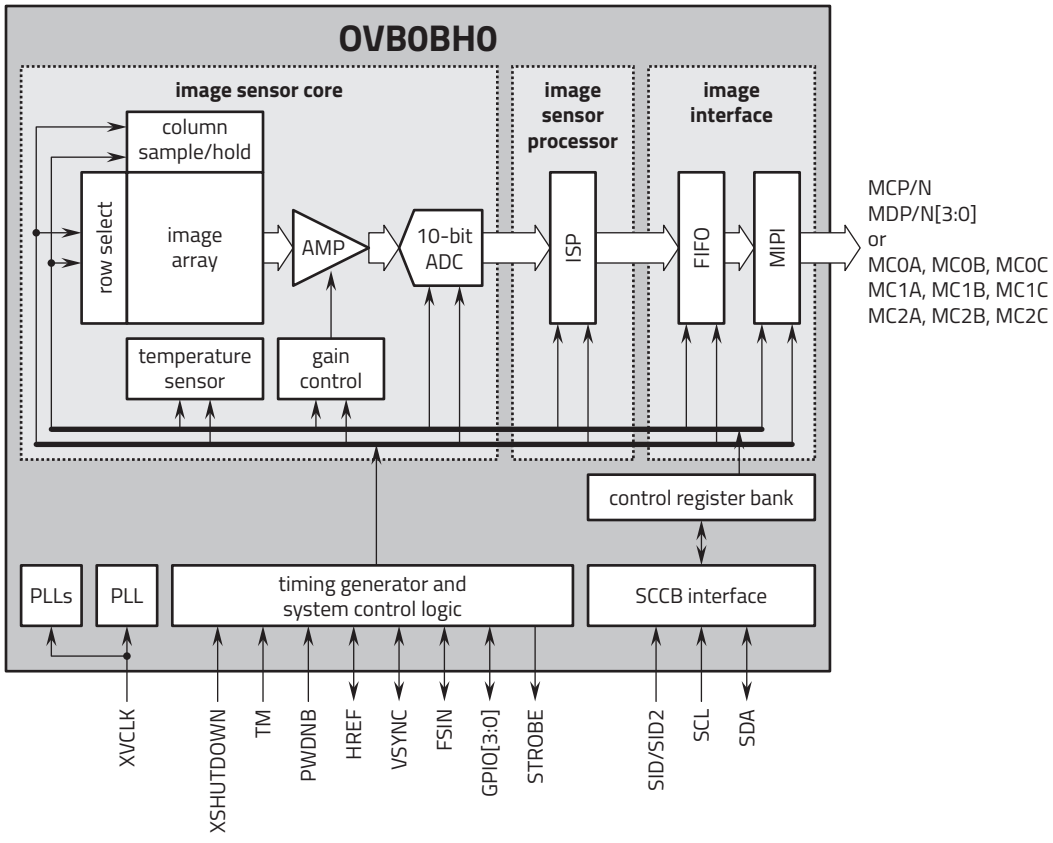
Technical Specifications

- **active array size:** 16384 x 12288
- **maximum image transfer rate:**
  - 200MP (16384 x 12288): 8 fps
  - 50MP (8192 x 6144): 24 fps
  - 12.5MP (8192 x 6144): 90 fps
- **power supply:**
  - core: 1.1V
  - analog: 2.8V
  - I/O: 1.8V or 1.2V
- **power requirements:**
  - active: 1250 mW (50MP @ 24 fps)
  - XSHUTDOWN: <10 µA
- **output formats:**
  10-bit RGB RAW
- **temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable: 0°C to +60°C junction temperature
  - temperature sensor: ±5°C between 0°C to +80°C (for higher resolutions: ±2°C between +50°C to +80°C)
- **lens size:** 1/1.28"
- **lens chief ray angle:** 37.24° non-linear
- **scan mode:** progressive
- **pixel size:** 0.612 µm x 0.612 µm
- **image area:**
  10066.176 µm x 7559.424 µm

Product Features

- automatic black level calibration (ABLC)
- programmable controls for:
  - frame rate
  - mirror and flip
  - binning
  - cropping
  - windowing
- support for dynamic DPC
- supports output formats:
  - 10-bit RGB 16C RAW
  - 10-bit RGB Bayer
  - 10-bit RGB Bayer HDR
- supports horizontal and vertical subsampling
- supports typical images sizes:
  - 16384 x 12288
  - 8192 x 6144
  - 7680 x 4320
  - 4096 x 3072
  - 3840 x 2160
  - 1920 x 1080
  - 1280 x 720
- standard serial SCCB interface
- 4-lane D-PHY MIPI TX interface, up to 3.0 Gbps per lane
- 2/3 trio C-PHY interface, up to 3.0 Gsps/trio
- supports 4-cell binning, 4-cell full, 16-cell binning, and 16-cell full
- HDR support:
  stagger HDR 2/3 exposure timing
- on-chip 4-cell to Bayer converter
- three on-chip phase lock loops (PLLs)
- programmable I/O drive capability
- dual I/O power supply (1.2V/1.8V)
- built-in temperature sensor
- 0.612 µm pixel

Functional Block Diagram



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