OMNIVISION’s OVB0B 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 OVB0B delivers premium video and preview quality in 12.5MP mode, especially in low light. The OVB0B is the first 200MP to offer 100% quad phase detection (QPD) technology for excellent fast autofocus performance.

The OVB0B 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 OVB0B can also output 12.5MP at 30 fps with 3-exposure staggered HDR timing.

The OVB0B supports CPHY, DPHY and dual DOVDD (1.8V and 1.2V).

Find out more at www.ovt.com.
Applications

- mobile wide camera
- mobile ultra wide 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
- 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

Functional Block Diagram

- OVBOBOH
- image sensor core
  - column sample/hold
  - image array
  - temperature sensor
  - gain control
  - 10-bit ADC
  - AMP
  - timing generator and system control logic
- image sensor processor
  - ISP
  - FIFO
  - MIPI
- image interface
  - SCCB interface
  - control register bank
- PLLs
- PLL
- MPS/MBN
- PM/PMB
- HREF
- VSYNC
- FSIN
- GP0/30[30]
- STROBE
- SID/SD2
- SCL
- SDA
- XVCLK
- XSHUTDOWN
- MCP/N
- MDP/N[3:0]
- MC0A, MC0B, MC0C
- MC1A, MC1B, MC1C
- MC2A, MC2B, MC2C

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