



OMNIVISION OV50H Image Sensor For Mobile Devices User Guide

[Home](#) » [OMNIVISION](#) » OMNIVISION OV50H Image Sensor For Mobile Devices User Guide 



OV50H Image Sensor For Mobile Devices User Guide



Contents

- [1 OV50H Image Sensor For Mobile Devices](#)
- [2 Ordering Information](#)
- [3 Applications](#)
- [4 Technical Specifications](#)
- [5 Product Features](#)
- [6 Functional Block Diagram](#)
- [7 Documents / Resources](#)
- [8 Related Posts](#)

OV50H Image Sensor For Mobile Devices

OV50H 50 megapixe product brief

Flagship Low-Light and Autofocus Performance for Rear-facing Smartphone Cameras



OV50H is a high-resolution 50 megapixel (MP) image sensor with a dual conversion gain (DCG) technology powered 1.2-micron (pm) pixel in a 1/1.3-inch optical format, designed for high-end smartphone rear-facing cameras. The OV50H offers flagship-level low-light and autofocus performance, supports 12.5MP at 120 frames per second (fps) and high dynamic range (HDR) at 60 fps and is OMNIVISION's first sensor to feature horizontal/vertical (11/V) quad phase detection (QPD).

The OV50H is built on OMNIVISION's PureCel®Plus-S stacked-die technology for best-in-class image sensor performance. It features OMNIVISION's first H/V QPD autofocus technology. QPD enables 2×2 phase detection autofocus (PDAF) across the sensor's entire image array, and H/V mode ensures that both horizontal and vertical orientations are in the same frame with 100% coverage. This feature improves distance calculation, provides faster autofocus and enhances low-light performance. In combination with on-chip remosaic for the QPD color filter array, the result is premium image quality for the wide and ultrawide rear-facing cameras in flagship and high-end smartphones.

Find out more at www.ovt.com.

Ordering Information

Applications

- smart phones
- video conferencing
- PC multimedia

Technical Specifications

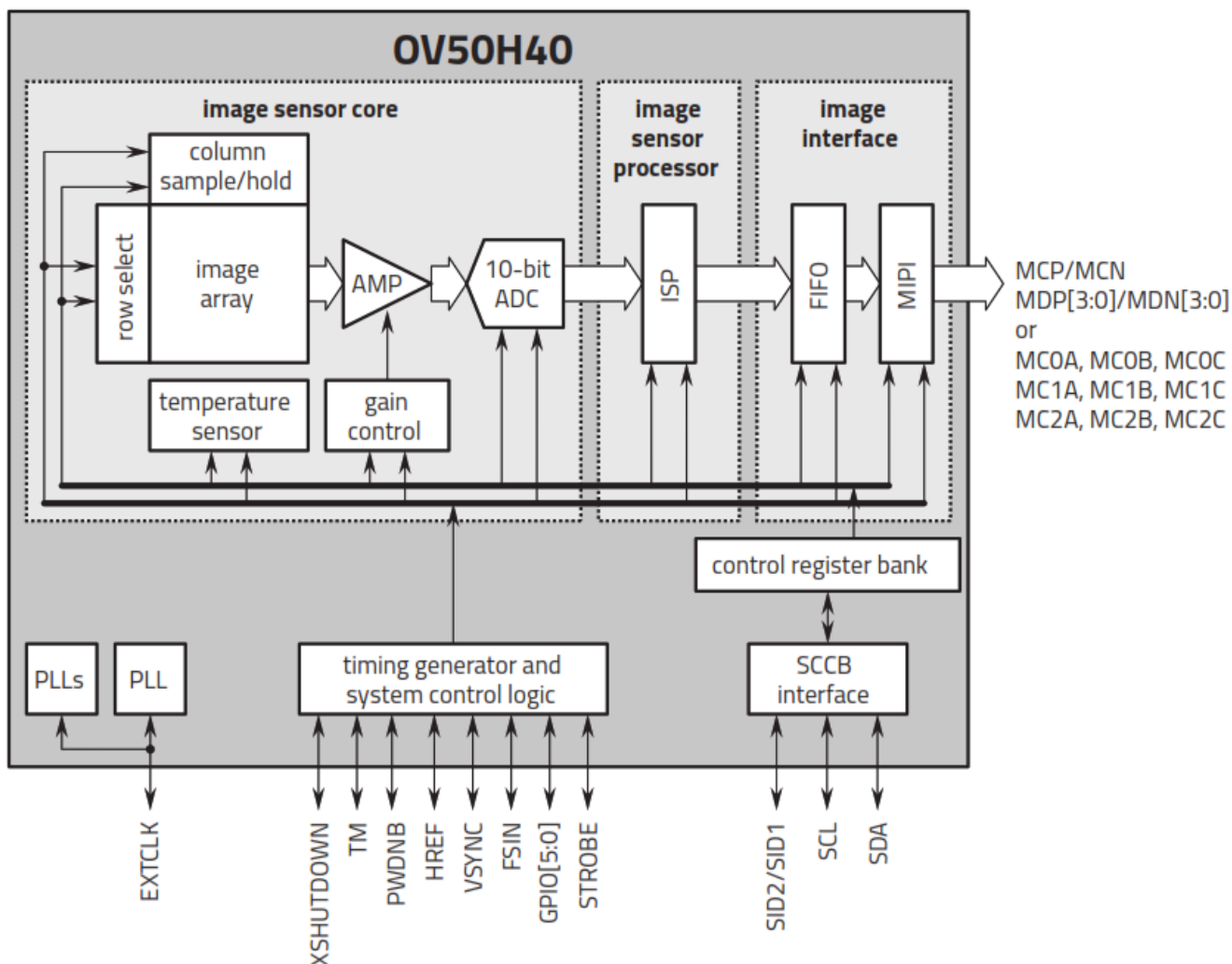
- active array size:
8192 x 6144
- maximum image transfer rate:
8192 x 6144:30 fps
- power supply:
 - core: 1.1V – analog: 2.8V
 - I/O: 1.8V/1.2V
- power requirements:
 - XSHUTDOWN: <10 pA
- output formats:
10/12/14-bit RGB RAW
- temperature range:
 - operating: -30° C to +85°C junction temperature
 - stable: 0°C to +60°C junction temperature
- lens size:
1/1.28"
- lens chief ray angle:
36.9° non-linear . scan mode: progressive
- pixel size:
1.197 pm x 1.197 pm
- image area:
9844.128 pm x 7430.976 pm

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 RAW

- 12/14-bit RGB RAW after DCG combination
- supports horizontal and vertical subsampling
- supports typical images sizes:
 - 8192 x 6144
 - 4096 x 3072
 - 4096 x 2304
 - 1920 x 1080
 - 1280 x 720
- standard serial SCCB interface
- up to 4-lane MIPI TX interface with speeds up to 3.0 Gbps/lane
- 2/3 trio C-PHY interface, up to 3.5 Gsps/trio
- high gain mode support, up to 63.75x for full resolution and 255x for 4-cell binning SCG mode
- supports type 2 QPD PDAF
- HDR support:
 - DCG RAW or combined RAW
 - stagger HDR 2/3 exposure timing
 - DCG RAW or DCG combined RAW + VS RAW
- on-chip QPD to Bayer converter
- three on-chip phase lock loops (Pas)
- programmable I/O drive capability
- built-in temperature sensor
- 1.197 μ m pixel

Functional Block Diagram



4275 Burton Drive
Santa Clara, CA 95054
USA

Tel: + 1 408 567 3000

Fax: + 1 408 567 3001

www.ovt.com

OMNIVISION reserves the right to make changes to their products or to discontinue any product or service without further notice. OMNIVISION and the OMNIVISION logo are trademarks or registered trademarks of OmniVision Technologies, Inc. PureCel is a registered trademark of OmniVision Technologies, Inc. All other trademarks are the property of their respective owners.



<https://www.ovt.com/products/ov50h/>





[OMNIVISION OV50H Image Sensor For Mobile Devices](#) [pdf] User Guide

OV50H Image Sensor For Mobile Devices, OV50H, Image Sensor For Mobile Devices, Mobile Devices