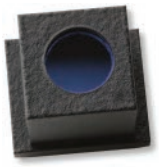


OVM7251 VGA CameraCubeChip® product brief

Compact Global Shutter Camera Module for Near-Infrared Mobile Facial Authentication, AR/VR Eye Tracking and Machine Vision

lead free

available in a lead-free package

OmniVision's OVM7251 CameraCubeChip® module is built on the 3 µm OmniPixel®3-GS global shutter architecture. The OVM7251 offers designers a small form factor, low power consumption and a cost effective 640 x 480 VGA resolution camera module. The module provides low power consumption via multiple standby modes and faster global shutter capture and processing during active mode. Additionally, it is available in an 850 nm version for AR/VR eye tracking, and a 940 nm version for machine vision and 3D sensing in mobile facial authentication.

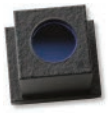
The OVM7251's sleep current consumption is only at 5 µA. During active mode, the module's global shutter enables fast image capture. This arrangement can result in extended battery life for a broad range of applications, such as head-mounted displays for AR/VR, facial authentication in smart phones, and machine vision for factory automation, barcode readers and robot vacuum cleaners.

OmniVision's CameraCubeChip® modules reduce design time by integrating the image sensors, processor and lenses in a miniature wafer-level, reflowable chip-scale package. The OVM7251 module is available now for sampling and volume production, along with an evaluation kit.

Find out more at www.ovt.com.

OmniVision

OVM7251



Applications

- Eye Tracking
- Wearable Devices
- Security and Surveillance
- Toys and Games

Product Features

- 3 µm x 3 µm pixel with OmniPixel®3-GS technology
- automatic black level calibration (ABLC)
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- support output formats: 8/10-bit RAW
- support for image sizes:
  - 640 x 480
  - 320 x 240
  - 160 x 120
- fast mode switching
- supports horizontal and vertical 2:1 and 4:1 monochrome subsampling
- supports 2x2 monochrome binning
- one-lane MIPI serial output interface
- one-lane LVDS serial output interface
- embedded 256 bits of one-time programmable (OTP) memory for part identification
- two on-chip phase lock loops (PLLs)
- built-in 1.5V regulator for core
- PWM
- built-in strobe control

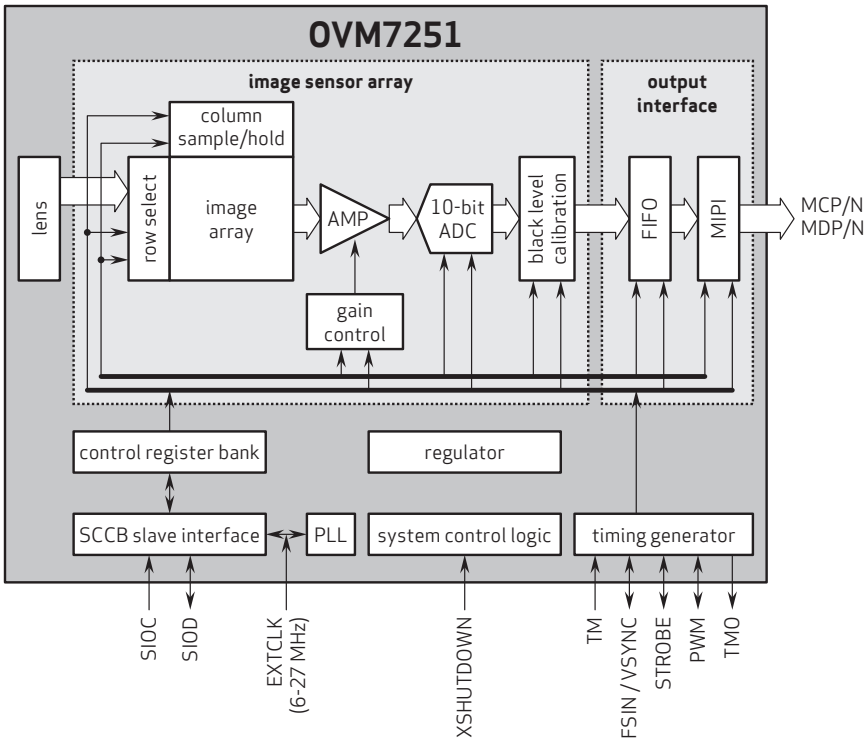
Ordering Information

- **OVM7251-RAIA**
  (b&w, lead-free) CameraCubeChip® with black coating, 850 nm short focus
- **OVM7251-RAIA-R1**
  (b&w, lead-free) CameraCubeChip® with black coating, 940 nm long focus

Technical Specifications

- **active array size:** 640 x 480
- **maximum image transfer rate:**
  - **640 x 480:** 120 fps
- **power supply:**
  - **analog:** 2.8V (nominal)
  - **core:** 1.5V (optional)
  - **I/O:** 1.8V (nominal)
- **power requirements:**
  - **active:** 119 mW @ 120 fps, VGA output
  - **standby:** 15 µA for AVDD, 40 µA for DOVDD without input clock, 700 µA for DOVDD with input clock
  - **XSHUTDOWN:** 5 µA for AVDD, 5 µA for DOVDD
- **temperature range:**
  - **operating:** -30°C to +70°C junction temperature
  - **stable image:** 0°C to +50°C junction temperature
- **output interface:** 1-lane MIPI/LVDS serial output
- **output formats:** 10-bit RAW BW
- **optical format:** 1/7.5"
- **diagonal field of view (FOV):**
  - **RAIA:** 80°
  - **RAIA-R1:** 83°
- **f no.:** 2.2
- **focal length:**
  - **RAIA:** 1.837 mm
  - **RAIA-R1:** 1.842 mm
- **scan mode:** progressive
- **pixel size:** 3 µm x 3 µm
- **image area:** 1968 µm x 1488 µm
- **net weight:** 60 mg

Functional Block Diagram



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