OV2744 1080p product brief

Second-Generation RBG-Ir PureCel® Sensor Brings Biometric Functionality to Notebooks and Mobile Devices

The OV2744 is a 1.4-micron PureCel® image sensor that utilizes OmniVision’s second-generation, industry-leading RGB-Ir technology to bring biometric capabilities such as facial recognition to the next generation of notebooks, tablets, and front-facing cameras in smartphones.

Using OmniVision’s groundbreaking RGB-Ir technology, the OV2744 delivers high quality IR output without compromising its premium RGB images. This solution eliminates the need to have two-camera solutions for devices that require both IR and RGB imaging.

Compared to other RBG-IR sensors in the market right now, the OV2744’s best-in-class color reproduction shows less color aliasing, and requires the lowest power consumption of any 1080p sensor currently available.

The 1/6-inch OV2744 captures full resolution 1080p high definition (HD) video at 60 frames per second (fps) with support for full frame staggered high dynamic range (HDR). The sensor also features ultra-low power mode (ULPM), which reduces the resolution and frame rates to conserve additional power. The sensor fits into a 5 x 5 x 3 mm module.

Find out more at www.ovt.com.
OV2744

Applications
- Smartphones
- Ultrabooks and Notebooks
- Tablets
- Digital Still Cameras (DSC)
- Digital Video Camcorders (DVC)
- PC Multimedia

Product Features
- 1.4 µm x 1.4 µm pixel
- optical size of 1/6”
- programmable controls for:
  - frame rate
  - mirror and flip
  - cropping
  - windowing
- supports output formats:
  - 10-bit RAW RGB-Ir
- supports images sizes:
  - 1080p (1920x1080)
  - 720p (1280x720)
- standard serial SCCB interface
- up to 2-lane MIPI serial output interface (supports maximum speed up to 1000 Mbps/lane)
- embedded 2 kilobits of one-time programmable (OTP) memory for customer use
- programmable I/O drive capability
- light sensing mode (LSM)
- RGB-Ir in a 4x4 pattern
- programmable controls for:
  - optical size of 1/6”
  - 1.4 µm x 1.4 µm pixel
- 10-bit RAW RGB-Ir
- supports images sizes:
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Product Specifications
- active array size: 1920 x 1080
- power supply:
  - core: 1.2V
  - analog: 2.8V
  - I/O: 1.8V
- power requirements:
  - active: 90 mW
  - standby: 210 µA
  - XSHUTDN: 0.6 µA
- temperature range:
  - operating: -30°C to +85°C junction temperature
  - stable image: 0°C to +60°C junction temperature
- output format: 10-bit RAW RGB-Ir
- lens size: 1/6”
- input clock frequency: 6 - 27 MHz
- lens chief ray angle: 33° non-linear
- max S/N ratio: 38.3 dB
- dynamic range: 73.3 dB @ 15.5x gain
- maximum image transfer rate:
  - 1080p: 60 fps
  - 720p: 90 fps
- sensitivity: 553 mV/Lux-sec (6750 e-/Lux-sec)
- scan mode: progressive
- maximum exposure interval: 1112 µs
- pixel size: 1.4 µm x 1.4 µm
- image area: 2728.8 µm x 1549.8 µm
- package dimensions: COB: 3825 µm x 2889 µm

Functional Block Diagram