



OMNIVISION OG0TB World's Smallest Global Shutter Image Sensor User Guide

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OMNIVISION OG0TB World's Smallest Global Shutter Image Sensor



ABOUT PRODUCT

- The OG0TB is a three-layer stacked BSI global shutter (GS) image sensor for eye and face tracking in AR/VR/MR and Metaverse consumer devices. It has a package size of just 1.64 mm x 1.64 mm and features a 2.2 μm pixel in a 1/14.46-inch optical format (OF). The 400 x 400 resolution CMOS image sensor offers ultra-low power consumption, less than 7.2 mW at 30 fps, ideal for some of the smallest and lightest battery-powered wearables, such as eye goggles and glasses.
- The OG0TB GS image sensor features some of OMNIVISION's most advanced technology. It is built on OMNIVISION's PureCel®Plus-S stacked-die technology. Nyxel® technology enables the best quantum efficiency (QE) at the 940 nm NIR wavelength for sharp, accurate images of moving objects.
- High modulation transfer function (MTF) enables sharper images with greater contrast and more detail, which is especially important for enhancing decision-making processes in machine vision applications.
- The OG0TB supports a flexible interface, including MIPI with multi-drop, CPHY, SPI, etc. Find out more at www.ovt.com.

Applications

- augmented and virtual reality
- gaming
- machine vision
- industrial automation
- drones
- biometric authentication
- 3D imaging
- Industrial bar code scanning

Technical Specifications

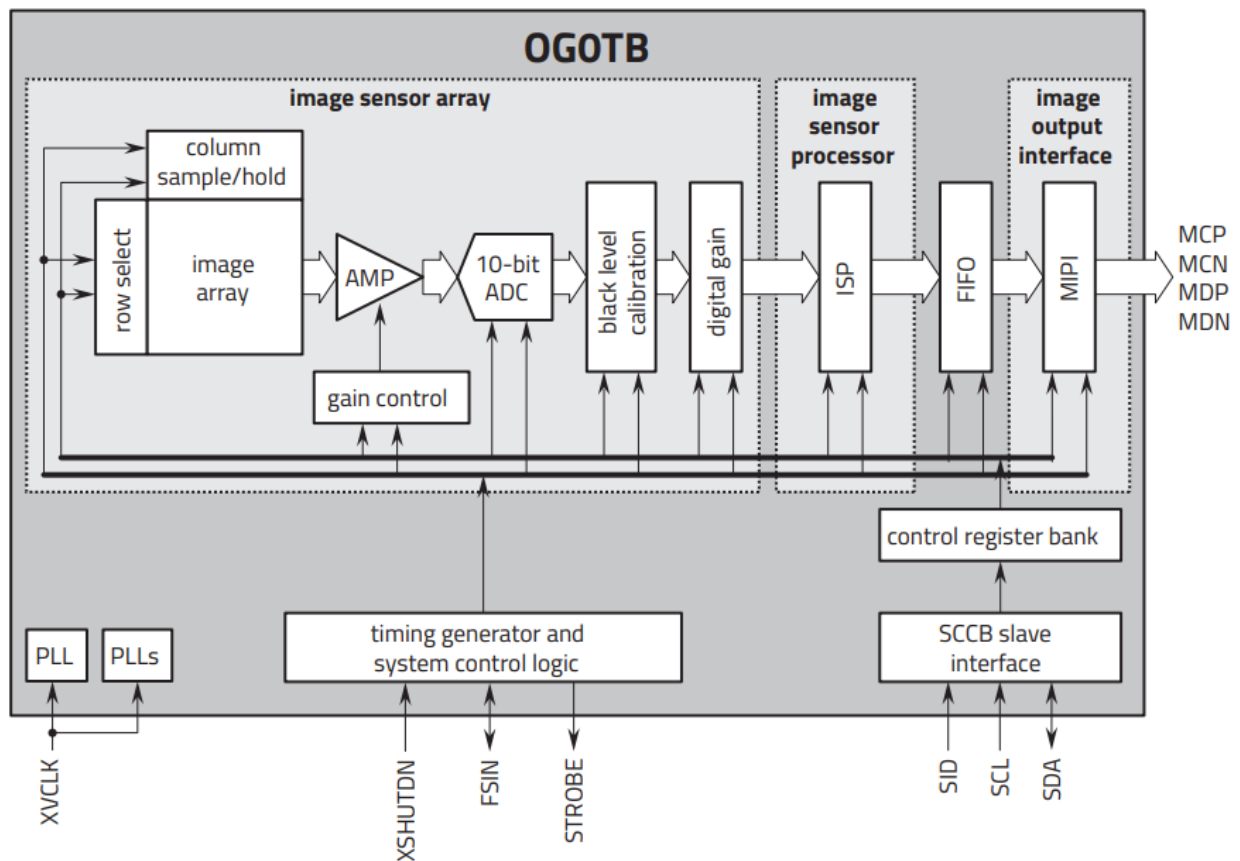
- **active array size:** 400 x 400
- **maximum image transfer rate:**

- **400 x 400:** 240 fps
- **200 x 200:** 480 fps
- **power supply:**
 - **analog:** 2.8V (nominal)
 - **core:** 1.1V (nominal)
- **power requirements:**
 - **active:** 52 mW
 - **XSHUTDN:** 30 μ A
- **lens size:** 1/14.46"
- **temperature range:**
 - **operating:** -30°C to +85°C junction temperature
 - **stable image:** 0°C to +60°C junction temperature
- **lens chief ray angle:** 30.84° non-linear
- **output interfaces:** 1-lane MIPI / 2-lane SPI serial output
- **output formats:** 8-bit/10-bit RAW
- **pixel size:** 2.2 μ m x 2.2 μ m
- **image area:** 915.2 μ m x 915.2 μ m

Product Features

- 2.2 μ m x 2.2 μ m pixel with PureCel®Plus-S, Global Shutter, and Nyxel® technologies
- automatic black level calibration (ABLC)
- **programmable controls for:**
 - frame rate
 - mirror and flip
 - cropping
- **support output formats:** 8-bit/10-bit RAW
- fast mode switching
- **supports horizontal and vertical 2:1** subsampling
- OG0TB1B-A25A-Z (b&w, lead-free) 16-pin CSP
- supports 2x2 binning
- 1-lane MIPI / 2-lane SPI serial output interface
- **support for image sizes:**
 - 400 x 400
 - 200 x 200
- embedded 16 bytes of one-time programmable (OTP) memory for customer use
- two on-chip phase lock loops (PLLs)
- built-in strobe control
- support for multi-sensor mode operation

Functional Block Diagram



FOR MORE INFO



ABOUT COMPANY

- 4275 Burton Drive
- Santa Clara, CA 95054
- USA
- **Tel:** + 1 408 567 3000
- **Fax:** + 1 408 567 3001
- www.ovt.com

Documents / Resources



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 OG0TB, World s Smallest Global Shutter Image Sensor, Global Shutter Image Sensor, Shutter
 Image Sensor, Image Sensor, OG0TB, Sensor

