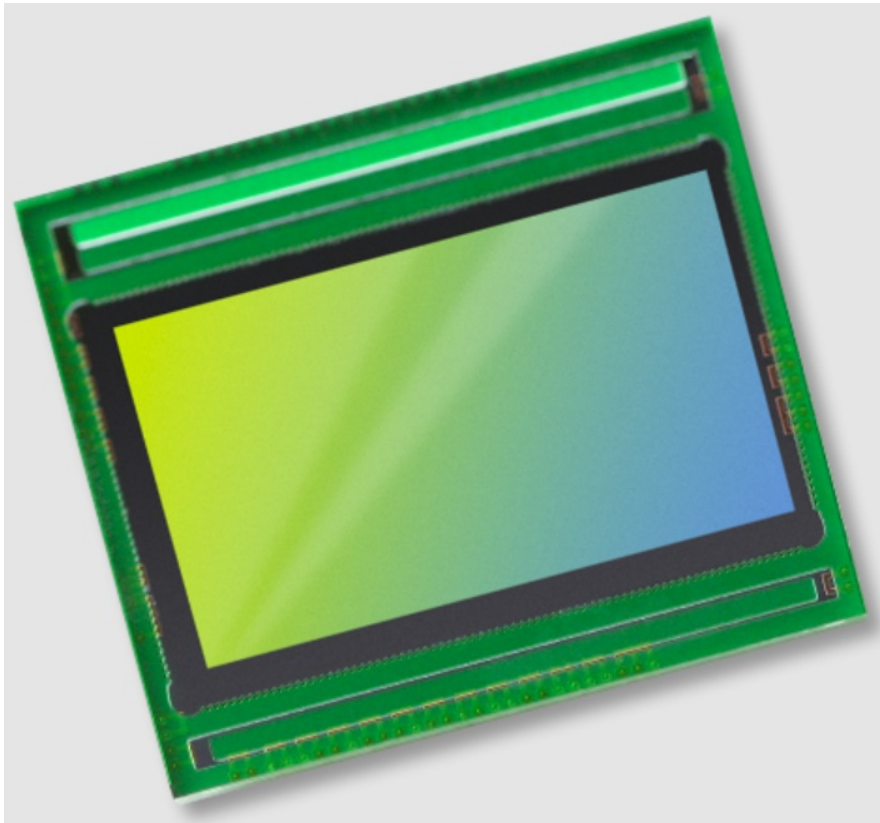


OMNIVISION OV2775 High Performance 2-Megapixel OmniBSI-2 Sensor Owner's Manual

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High Performance 2-Megapixel OmniBSI™-2 Sensor for Advanced Automotive Applications

OMNIVISION's OV2775 is a 2.8 μm OmniBSI™-2 image sensor designed for a wide range of automotive imaging applications. The OV2775 features 1920 x 1080 resolution and Deep Well™ pixel technology, delivering 16-bit linear output to achieve 94 dB of dynamic range from a single exposure for best-in-class low-light performance. The OV2775's advanced high dynamic range (HDR) capabilities make it ideally suited for automotive applications such as front-view machine vision advanced driver assistance systems (ADAS), rear video mirrors, camera monitor systems (CMS), and dash cameras.

Built on OMNIVISION's OmniBSI™-2 Deep Well™ pixel technology, the OV2775 enables 94 dB of dynamic range from a single exposure without any drop in signal-to-noise ratio or HDR combination artifacts. The OV2775 also features a dual exposure mode that can expand the sensor's dynamic range to more than 120 dB, using a second "very short" exposure to minimize motion artifacts

The OV2775 comes in an AEC-Q100 Grade 2 qualified 6.5 x 5.7 mm chip scale package and contains an advanced set of safety mechanisms.

Find out more at www.ovt.com

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Applications

- automotive
- 360° surround view system
- lane departure warning/ lane keep assist
- blind spot detection
- pedestrian detection
- traffic sign recognition
- occupant sensor
- camera monitoring system
- autonomous driving

Product Features

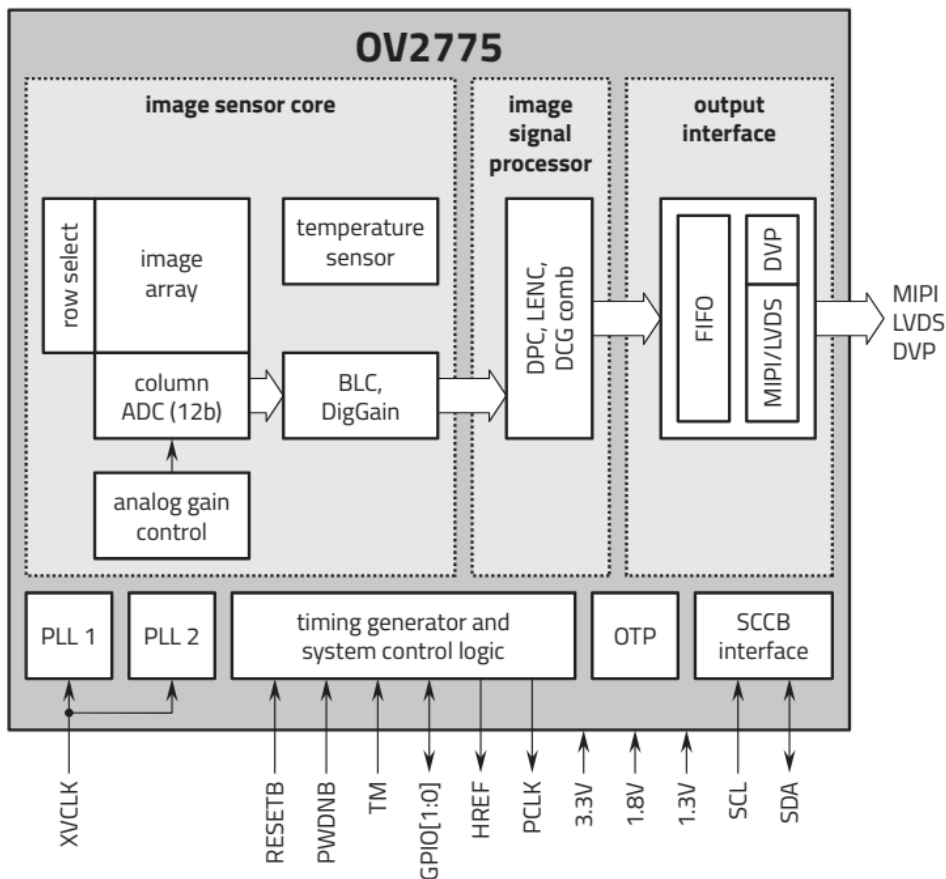
- support for image size:
 - 1920 x 1080
 - VGA
 - QVGA, any cropped size
- high dynamic range
- high sensitivity
- low power consumption
- image sensor processor functions:
 - lens correction
 - defective pixel cancelation
 - HDR combination
 - automatic black level correction
- supported output formats: RAW

- horizontal and vertical sub-sampling
- SCCB for register programming
- high speed serial data transfer with MIPI CSI-2/LVDS
- parallel 12-bit DVP output
- external frame synchronization capability
- embedded temperature sensor
- one time programmable (OTP) memory

Technical Specifications

- **active array size:** 1920 x 1080
- **maximum image transfer rate:**
 - full resolution: 30 fps
- **power supply:**
 - **analog:** 3.14 ~ 3.47V
 - **digital:** 1.2 ~ 1.4V
 - **DOVDD:** 1.7 ~ 1.9V
 - **AVDD:** 1.7 ~ 1.9V
- **power requirements:**
 - **active:** 395 mW
 - **software standby:** 10 mW
- **temperature range:**
 - **operating:** -40°C to +105°C sensor ambient temperature and -40°C to +125°C junction temperature
- **output interfaces:** up to 4-lane MIPI CSI-2/LVDS, 12-bit DVP
- **lens size:** 1/2.9"
- **lens chief ray angle:** 15°
- **scan mode:** progressive
- **shutter:** rolling shutter
- **output formats:** linear – 12-bit RAW, 10-bit compressed RAW; single exposure HDR – 16-bit combined RAW, 12-bit compressed combined RAW, 2×12 bit RAW; dual exposure HDR – 16-bit combined RAW + 12-bit VS RAW, 12-bit compressed combined RAW + 12-bit VS RAW, 3×12 bit RAW, 3×10 bit combined RAW, 12-bit (10-bit) RAW (HCG or LCG) + 12-bit (10-bit) VS
- **pixel size:** 2.8 μm x 2.8 μm
- **image area:** 5482.35 μm x 3202 μm

Functional Block Diagram



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OV2775, OV2775 High Performance 2-Megapixel OmniBSI-2 Sensor, High Performance 2-Megapixel OmniBSI-2 Sensor, 2-Megapixel OmniBSI-2 Sensor, OmniBSI-2 Sensor, Sensor