



OV2775

1080p product brief



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.



OV2775

Ordering Information

- OV02775-E77Y-1E (color, lead-free) 77-pin a-CSP™, with DAR coating, packed in tray without protective film
- OV02775-E77Y-LE (color, lead-free) 77-pin a-CSP™, with DAR coating, packed in tray with protective film
- OV02775-E77Y-OE (color, lead-free) 77-pin a-CSP™, with DAR coating, packed in tape & reel with protective film

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

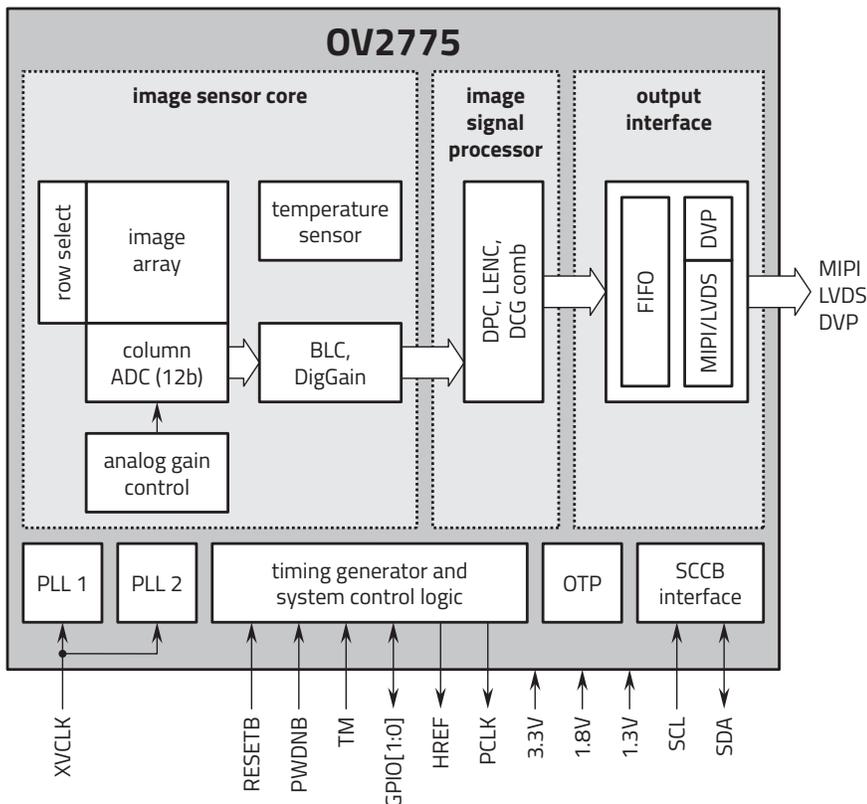
Product Features

- 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 cancellation
 - 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, 2x12 bit RAW; dual exposure HDR - 16-bit combined RAW + 12-bit VS RAW, 12-bit compressed combined RAW + 12-bit VS RAW, 3x12 bit RAW, 3x10 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



Version 1.6, August 2023

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 registered trademarks of OmniVision Technologies, Inc. a-CSP and Deep Well are trademarks of OmniVision Technologies, Inc. All other trademarks are the property of their respective owners.

 OMNIVISION®