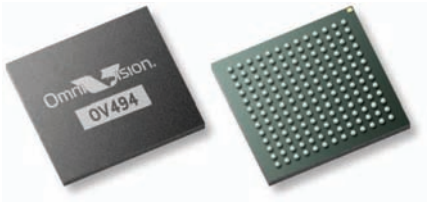



# OV494 companion HDR image processor for automotive applications product brief

## Industry-Leading Distortion and Perspective Correction for Backup Camera Automotive Imaging Systems

lead free

available in a lead-free package

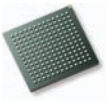
OmniVision's OV494 is a compact image signal processor (ISP) that enables best-in-class electronic distortion and perspective correction for a wide range of rearview camera architectures in automotive applications. The OV494 can output on a wide range of interfaces including DVP, MIPI, BT1120 or NTSC, performing distortion correction on high-quality video with up to 190 degrees of pixel-mapping flexibility. The OV494 also offers eight independent overlays with a 32-color palette for each image, without requiring additional processing support.

The OV494 is ideally suited to work with OmniVision's portfolio of high-performance image sensors, including the OV9716 and OV10640 automotive image sensors. The OV494 can process image and video input of up to 1.4 megapixels at 60 frames per second (fps), with support for high dynamic range (HDR) up to 120 dB.

The OV494 comes in a compact 7 mm x 7 mm, 169-pin ball grid array (BGA) package.

Find out more at www.ovt.com.

# OV494



## Applications

- Rear View Camera
- Surround View System
- e-Mirror
- Camera Monitoring System (CMS)

## Product Features

- up to 1.3MP sensor (1392x976 or 1280x1080) 60 fps with MIPI output (MIPI), 45 fps with DVP output (3.3V I/O)
- up to three capture HDR combination
- support for local and global tone mapping
- automatic white balance (AWB), automatic exposure control (AEC) / automatic gain control (AGC), 50/60 Hz auto flicker detection and elimination
- statistics data for up to four user programmable ROIs
- distortion/perspective correction (DC/PC), up to 190° HFOV
- 8 independent overlay layers, 32 color/palette per image, line, and global transparency control for each layer
- up to 8 GPIOs
- embedded information including frame counter, temperature, and register data for each image to enable critical automotive safety applications
- 1K bits of one-time programmable memory (OTP)
- brown-out detection circuit and output flag
- JTAG boundary scan
- serial camera control bus (SCCB) master/slave interface for sensor and ASIC configuration
- up to four-wire SPI flash interface to retrieve stored firmware and data from external SPI flash memory
- internal NTSC video encoder and NTSC output interface
- on-chip voltage regulator from 1.8V to 1.1V and one DCDC from 3.3V/1.8V to 1.1V

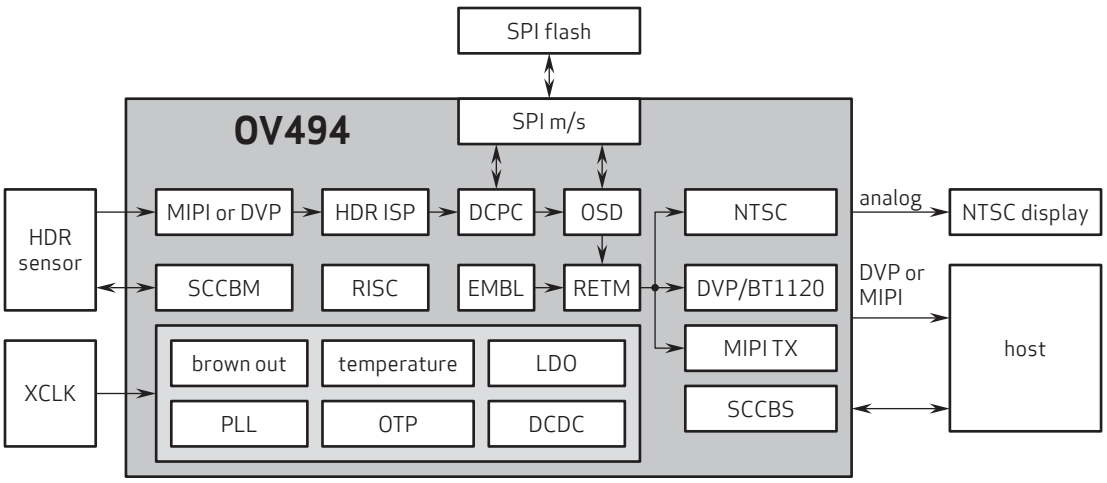
## Ordering Information

- **OV00494-B69G-1B** (lead-free) 169-pin BGA, packed in tray
- **OV00494-B69G-TB** (lead-free) 169-pin BGA, packed in tape and reel

## Product Specifications

- **power supply:**
  - **core:** 1.1V ±5%
  - **I/O:** 1.8V ±5% or 3.3V ±5%
- **power consumption:** 175 mW, measured at room temperature with 1280 x 720 @ 30 fps, MIPI in and DVP out (12-bit, 1.8V I/O)
- **temperature range:**
  - **operating:** -40°C to +105°C ambient temperature
- **sensor interface:** MIPI RX (1x4 lane, 1 Gbps/lane) or DVP (12-bit, up to 100 MHz)
- **input clock:** 6 - 36 MHz
- **output interface:** NTSC analog composite (720x480), DVP (up to 24-bit, 150 MHz with 3.3V I/O, 100 MHz with 1.8V I/O), MIPI TX (1x4 lane, 1.2 Gbps/lane)
- **sensor data format:** 3x12-bit RAW, 16-bit DCG (only MIPI input) +12-bit RAW, 12-bit DCG+12-bit RAW, 2x12-bit RAW
- **output data format:** YUV422 8/10/12-bit, RGB888 24-bit, RGB656 16-bit, BT1120 16-bit, BT656 8-bit
- **package dimensions:** 7 mm x 7 mm

## Functional Block Diagram

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