# OAH0428
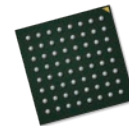## ASIC product brief

## Compact and Flexible Video Processor for Medical Applications

OMNIVISION's OAH0428 is a single companion chip solution that provides an integrated analog to digital conversion and limited ISP functionality including Auto White Balance (AWB), Auto Gain Control (AGC) and Auto Exposure Control (AEC), Staggered HDR and multi-frame HDR. The OAH0428 can accept 4-wire digital input, MIPI input as well as 4-wire analog input and convert it to DVP or MIPI output for signal processing.  While converting the signal, it also provides image clean-up, image resizing and manipulations including frame rate control, mirroring and flipping.

The OAH0428 can interface with the MIPI output from OMNIVISION's OH08A, OH08B, OH02A, OH01A, or the 4-wire digital / analog output from OH0FA, OV6946, OH0TA, OV6948 and convert it to a MIPI / DVP signal.

In addition, the OAH0428 supports standard SCCB control, analog, Bayer RGB, and RAW analog inputs. During the operation, the input signals from the image sensors are digitized by and ADC and then processed by a digital signal processor (DSP) and finally standard MIPI / DVP outputs are sent out.

Find out more at www.ovt.com.

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# OAH0428

## Ordering Information

- **OAH0428-B64G** (lead-free)
  64-pin BGA

## Applications

- endoscopes
- wearables

## Technical Specifications

- **power supply:**
  - core: 1.1V
  - I/O: 3.3V
  - analog: 3.3V
- **temperature range:** -30°C to +70°C
- **package dimensions:** 6 mm x 6 mm

## Product Features

- automatic black level calibration (ABLC)
- support for the following ISP functions:
  - LENC
  - DPC
  - AWB
  - RAW_DNS
- staggered HDR
- programmable controls for:
  - frame rate
  - mirroring
  - windowing
- supports 2x2 binning, cropping, and 2x upscaling
- supports 4-wire analog, 4-wire digital, Bayer RGB, 8/10-bit RAW HDR data input
- supports 10-bit DVP, 2-lane MIPI / sub-LVDS data output
- system functions:
  - auto-start (OH02B10, OH0FA10)
  - imager identification (via sync codes for analog, sensor ID register for digital)
  - pseudo-global shutter
  - group hold
  - bypass mode
- 6 x 6 mm to fit into handle or at back-end, near ISP in medical endoscope and other video devices
- SPI master and serial camera control bus (SCCB) master/slave control interfaces
- security functions:
  - test pattern generation
  - embedded line data
  - frame counter
  - MBIST
- one-time programmable (OTP) memory
- autoclavable

## Functional Block Diagram

OMNIVISION™