

## FEATURES

- 12-bit, 45 MHz ADC**
- CDS with variable gain**
- 0 dB to 36 dB, 10-bit VGA**
- Black level clamp with variable level control**
- Precision Timing core with 174 ps resolution**
- Integrated, 7-channel H-driver and RG clock drivers**
- 7-channel LD driver**
- Integrated 16-channel V-driver**
- Complete on-chip ISA timing generator**
- I<sup>2</sup>C serial interface**
- MIPI CSI-2 transmit interface with support for 1 or 2 data lanes**
- On-chip driver for external crystal**
- 8 GPOs**
- 6 mm × 6 mm, 117-ball WLCSP package with 0.5 mm pitch**

## APPLICATIONS

- TOF CCD cameras**

## GENERAL DESCRIPTION

The ADDI9036 is a complete, 45 MHz, front-end solution for charge coupled device (CCD) time of flight (TOF) imaging applications. The ADDI9036 includes an analog front end (AFE), a programmable instruction set architecture (ISA) timing generator (ISATG), a 7-channel laser diode (LD) driver, a 7-channel H-driver, and a 16-channel vertical driver (V-driver). The *Precision Timing*<sup>®</sup> core allows adjustment of the CCD horizontal clocks and LD outputs with approximately 174 ps resolution at 45 MHz operation.

The AFE includes black level clamping, a correlated double sampler (CDS), a variable gain amplifier (VGA), and a 12-bit analog-to-digital converter (ADC). The AFE data is output through the MIPI<sup>®</sup> CSI-2 transmit interface.

The internal registers can be programmed by an I<sup>2</sup>C serial interface.

The ADDI9036 is packaged in a 6 mm × 6 mm, 117-ball WLCSP and is specified over an operating temperature range of -20°C to +85°C.

## FUNCTIONAL BLOCK DIAGRAM

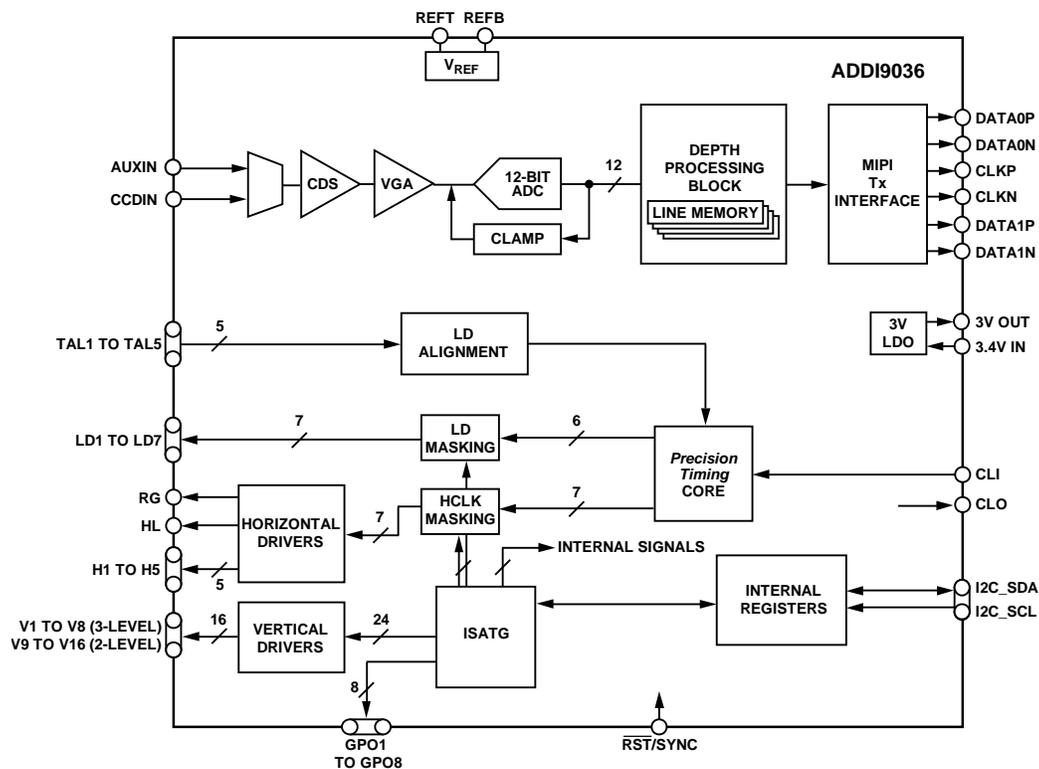


Figure 1.

For more information about the [ADDI9036](http://www.analog.com/addi9036), contact Analog Devices, Inc., at [afe.ccd@analog.com](mailto:afe.ccd@analog.com).

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