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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Dual-Channel, 14-Bit CCD Signal Processor with V-Driver and *Precision Timing* Generator

Data Sheet

AD9928

FEATURES

60 MHz grade available (AD9928BBCZ-60)
Registers similar to AD9920A and AD9990
Timing generator with 18-channel V-driver
Serial data output with reduced range LVDS interface
1.8 V dual AFE core
Internal LDO regulators for compatibility with 3 V systems
Correlated double sampler (CDS) with −3 dB, 0 dB, +3 dB,
    and +6 dB gain
6 dB to 42 dB, 10-bit variable gain amplifier (VGA)
14-bit, 40 MHz analog-to-digital converter (ADC)
Black level clamp with variable level control
Precision Timing core with ~390 ps resolution at 40 MHz
On-chip 3 V horizontal and RG drivers
General-purpose outputs (GPOs) for shutter support
On-chip driver for external crystal
128-ball CSP_BGA package, 9 mm × 9 mm, 0.65 mm pitch

APPLICATIONS

High speed digital imaging
Surveillance cameras
Industrial cameras

GENERAL DESCRIPTION

The AD9928 is a highly integrated CCD signal processor for digital still-image camera applications. It includes a dual analog front end with analog-to-digital conversion, combined with a full-function, programmable timing generator and an 18-channel vertical driver (V-driver) for a 2-channel output CCD. The timing generator is capable of supporting up to 24 vertical clock signals internally, and the on-chip V-driver supports up to 18 high voltage outputs. A *Precision Timing®* core allows adjustment of high speed clocks with approximately 390 ps resolution at 40 MHz operation. The AD9928 also contains seven general-purpose outputs, which can be used for shutter and system functions.

Each analog front end includes black level clamping, CDS, VGA, and a 14-bit ADC. The timing generator provides all the necessary CCD clocks: RG, H-clocks, V-clocks, sensor gate pulses, substrate clock, and substrate bias control.

The AD9928 is specified over an operating temperature range of −25°C to +85°C.

FUNCTIONAL BLOCK DIAGRAM
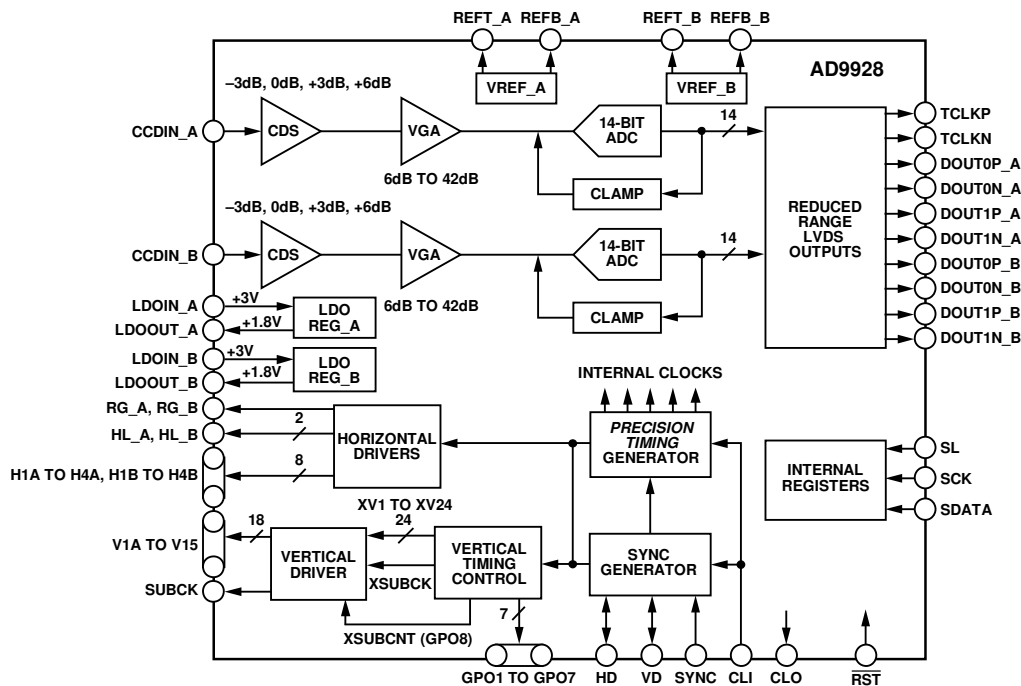

Figure 1.

For more information on the AD9928, email Analog Devices, Inc., at afe.ccd@analog.com.

AD9928* PRODUCT PAGE QUICK LINKS

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COMPARABLE PARTS 🖵

View a parametric search of comparable parts.

DOCUMENTATION 🖵

Data Sheet

- AD9928: Dual-Channel, 14-Bit CCD Signal Processor with V-Driver and Precision Timing Generator Data Sheet

DESIGN RESOURCES 🖵

- AD9928 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

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NOTES

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