# **ANALOG Quad-Channel, HD Image Signal Processor** with *Precision Timing* Core

### **Data Sheet**

### **FEATURES**

Support for CCD and CMOS image sensors 4 AFE channels 1.8 V analog and digital core supply voltage Serial data output with reduced range LVDS outputs Differential analog inputs CDS or SHA configuration (CDS bypass) with -3 dB, 0 dB, +3 dB, and +6 dB gain 6 dB to 42 dB, 10-bit variable gain amplifier (VGA) 14-bit, 72 MHz analog-to-digital converter (ADC) Black level clamp with variable level control *Precision Timing* core with 220 ps resolution at 72 MHz

#### APPLICATIONS

Digital video cameras Digital still cameras Medical Imaging High speed industrial cameras

#### **GENERAL DESCRIPTION**

The ADDI7004 is a highly integrated, quad-channel, HD image signal processor for high speed imaging applications. Each channel is specified at pixel rates of up to 72 MHz and consists of a complete analog front end (AFE) with ADC conversion. The *Precision Timing*<sup>™</sup> core allows adjustment of the correlated double sampler (CDS) and sample-and-hold amplifier (SHA) clocks with 220 ps resolution at 72 MHz operation. The ADDI7004 also contains a reduced range low voltage differential signaling (LVDS) interface for the dual-channel data outputs.

**ADDI7004** 

Each analog front end includes black level clamping, a CDS/SHA, a VGA, and a 72 MHz, 14-bit analog-to-digital converter (ADC). Operation is programmed using a 3-wire serial interface.

Packaged in a space-saving, 6 mm  $\times$  6 mm, 76-ball BGA, the ADDI7004 is specified over an operating temperature range of  $-40^{\circ}$ C to  $+85^{\circ}$ C.



#### FUNCTIONAL BLOCK DIAGRAM

For more information on the ADDI7004, email Analog Devices, Inc., at afe.ccd@analog.com.

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## ADD17004

### NOTES



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