

### FEATURES

- Dual 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, 65 MHz analog-to-digital converter (ADC)**
- Black level clamp with variable level control**
- Precision Timing* core with 240 ps resolution @ 65 MHz**

### APPLICATIONS

- Digital video cameras**
- Digital still cameras**
- Digital copiers**
- Multifunction printers**
- High speed industrial cameras**

### GENERAL DESCRIPTION

The AD9978 is a highly integrated, dual-channel CCD signal processor for high speed digital video camera applications. Each channel is specified at pixel rates of up to 65 MHz and consists of a complete analog front end with ADC conversion. The *Precision Timing*™ core allows adjustment of the correlated double sampler (CDS) and sample-and-hold amplifier (SHA) clocks with 240 ps resolution at 65 MHz operation. The AD9978 also contains a reduced range, low voltage differential signaling (LVDS) interface for the dual-channel data outputs.

Each analog front end includes black level clamping, a CDS, a VGA, and a 65 MHz, 14-bit ADC. Operation is programmed using a 3-wire serial interface.

Packaged in a space-saving, 6 mm × 6 mm, 40-lead LFCSP, the AD9978 is specified over an operating temperature range of –25°C to +85°C.

### FUNCTIONAL BLOCK DIAGRAM

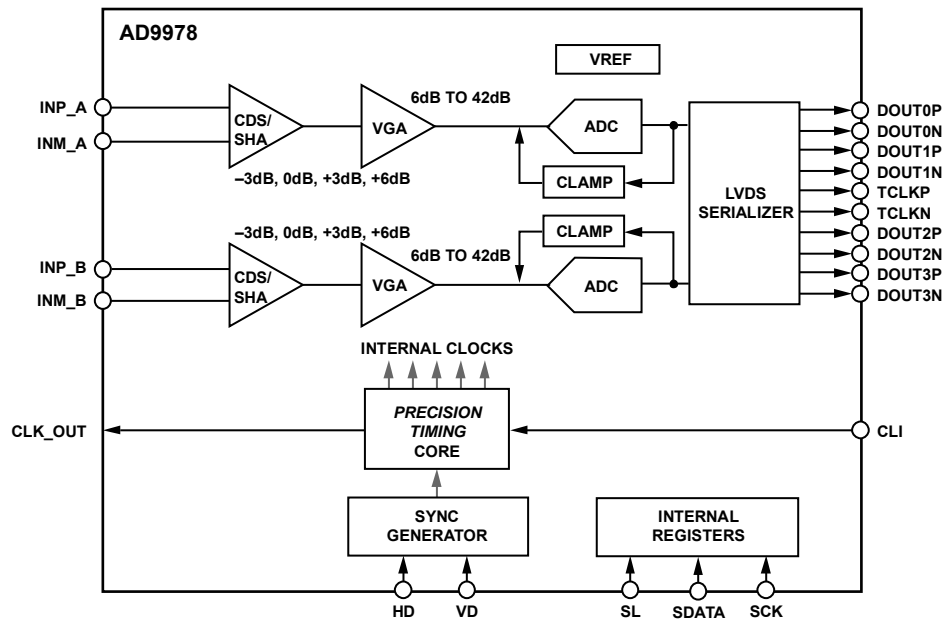


Figure 1.

For more information about the AD9978, contact Analog Devices via email at [afe.ccd@analog.com](mailto:afe.ccd@analog.com).

#### Rev. SpC

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**AD9978**

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