

### FEATURES

- 1.8 V analog and digital core supply voltage**
- Serial data link with reduced range LVDS outputs**
- 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)**
- 12-bit, 50 MHz ADC**
- Black level clamp with variable level control**
- Complete on-chip timing generator**
- Precision Timing* core with 310 ps resolution @ 50 MHz**
- On-chip, 3 V horizontal and RG drivers**
- 6 mm × 6 mm, 40-lead LFCSP\_VQ**

### APPLICATIONS

- Digital video camcorders**
- Professional/high end digital cameras**
- Broadcast cameras**
- Industrial high speed cameras**
- High speed data acquisition systems**

### GENERAL DESCRIPTION

The AD9971 is a highly integrated CCD signal processor for high speed digital video camera applications. Specified at pixel rates of up to 50 MHz, the AD9971 consists of a complete analog front end with analog-to-digital conversion combined with a programmable timing driver. The *Precision Timing*™ core allows adjustment of high speed clocks with 310 ps resolution at 50 MHz operation. The AD9971 also contains a reduced range LVDS interface for the data outputs.

The analog front end includes black level clamping, CDS, VGA, and a 50 MSPS, 12-bit ADC. The timing driver provides the high speed CCD clock drivers for RG, HL, and H1 to H4. Operation is programmed using a 3-wire serial interface.

Packaged in a space-saving 6 mm × 6 mm, 40-lead LFCSP\_VQ, the AD9971 is specified over an operating temperature range of -25°C to +85°C.

### FUNCTIONAL BLOCK DIAGRAM

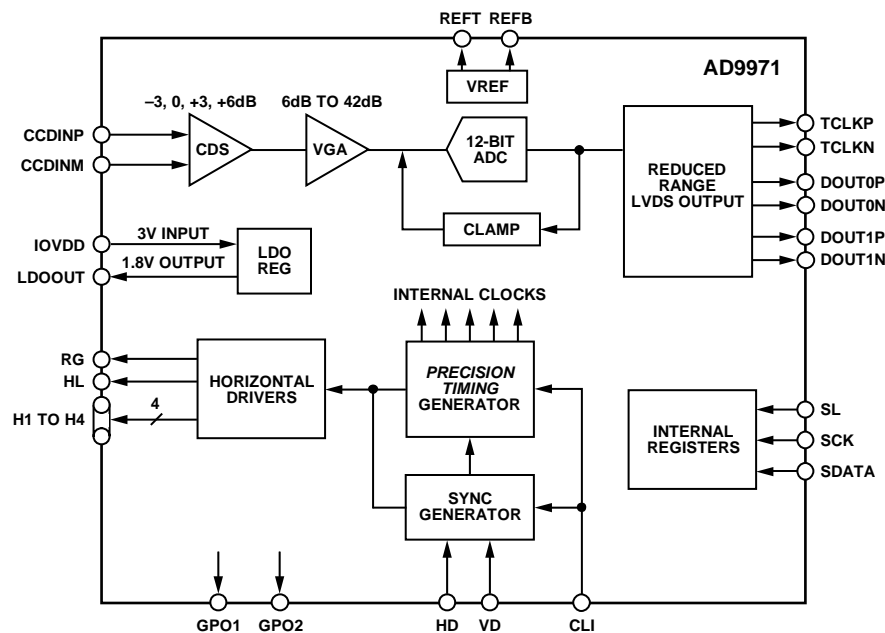


Figure 1.

For more information about the AD9971, contact Analog Devices, Inc. via email at: [afe.ccd@analog.com](mailto:afe.ccd@analog.com).

### Rev. SpA

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**AD9971**

**NOTES**