



18-bit 1.33MSPS Single-channel Analog-to-Digital Converter (ADC)

1 Main features:

- ◆ Convert bits: 18 bits
- ◆ Throughput rate: 1.33 MSPS
- ◆ Low power consumption: 10.5mW
- ◆ INL: $\pm 2.5\text{LSB}$ (Typical value)
- ◆ SNDR: 98dB@2kHz input
- ◆ THD: -112dB@2kHz input
- ◆ Differential input range: -VREF to VREF (VREF between 2.5V and 5.5V)
- ◆ Pipeline-free delay
- ◆ Serial interface: SPI compatible
- ◆ Package: 10-pin QFN package

2. Typical applications

- ◆ Battery powered equipment
- ◆ communication
- ◆ Automatic test equipment
- ◆ Data acquisition
- ◆ Medical instrument

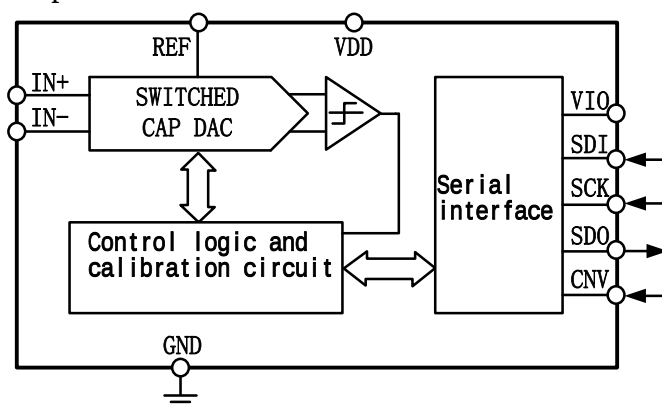
3 Product Description

The chip is an 18-bit, successive approximation analog-to-digital converter (ADC) powered by a single power supply (VDD). It has a low-power, high-speed, 18-bit sampling ADC and a multi-function serial interface port. At the CNV rising edge, the device samples the analog input voltage difference between IN+ and IN-, ranging from -ref to REF. The reference voltage (REF) is provided externally and can be independent of the supply voltage (VDD).

5 Compared with similar foreign products

	precision	Conversion rate	Data port	Power dissipation	SNDR	THD	Encapsulation form
AD7984 (ADI)	18-bit	1.33MSPS	Serial port	10.5mW	98dB@2kHz	-110dB@2kHz	QFN-10
HL7984	18-bit	1.33MSPS	Serial port	10.5mW	98dB@2kHz	-110@2kHz	QFN-10

The relationship between power consumption and throughput rate is linear. The SPI-compatible serial interface also enables several ADCs to be daisy-chain-linked to a three-wire bus using the SDI input and provides an optional busy indication. When VIO is a standalone power supply, it is compatible with 1.8V, 2.5V, 3V and 5V logic. This chip is compatible with foreign products AD7984 pins, which can be replaced. The functional structure block diagram of the chip is shown as follows:



4 Product Highlights

- ◆ Supports multiple ADCs Daisy chain connection
- ◆ Power consumption and throughput change linearly
- ◆ Difference conversion
- ◆ Low power consumption and high speed