

8-Channel Octal ADC Delta-Sigma 16ksps 24-bit Serial 64-Pin LFCSP EP Tray

Manufacturers	<a href="#">Analog Devices, Inc</a>
Package/Case	LFCSP-64
Product Type	Data Conversion ICs
RoHS	Pb-free Halide free
Lifecycle	



Images are for reference only

Please submit RFQ for AD7779ACPZ or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

The AD7779 is an 8-channel, simultaneous sampling ADC. There are eight full  $\Sigma$ - $\Delta$  ADCs on chip. The AD7779 provides an ultralow input current to allow direct sensor connection. Each input channel has a programmable gain stage allowing gains of 1, 2, 4, and 8 to map lower amplitude sensor outputs into the full-scale ADC input range, maximizing the dynamic range of the signal chain. The AD7779 accepts VREF from 1 V up to 3.6 V. The analog inputs accept unipolar (0 V to VREF/GAIN) or true bipolar ( $\pm$ VREF/GAIN/2 V) analog input signals with 3.3 V or  $\pm$ 1.65 V analog supply voltages. The analog inputs can be configured to accept true differential, pseudo differential, or single-ended signals to match different sensor output configurations.

Each channel contains an ADC modulator and a sinc3, low latency digital filter. An SRC is provided to allow fine resolution control over the AD7779 ODR. This control can be used in applications where the ODR resolution is required to maintain coherency with 0.01 Hz changes in the line frequency. The SRC is programmable through the serial port interface (SPI). The AD7779 implements two different interfaces: a data output interface and SPI control interface. The ADC data output interface is dedicated to transmitting the ADC conversion results from the AD7779 to the processor. The SPI interface is used to write to and read from the AD7779 configuration registers and for the control and reading of data from the SAR ADC. The SPI interface can also be configured to output the  $\Sigma$ - $\Delta$  conversion data.

The AD7779 includes a 12-bit SAR ADC. This ADC can be used for AD7779 diagnostics without having to decommission one of the  $\Sigma$ - $\Delta$  ADC channels dedicated to system measurement functions. With the use of an external multiplexer, which can be controlled through the three general-purpose inputs/outputs pins (GPIOs), and signal conditioning, the SAR ADC can be used to validate the  $\Sigma$ - $\Delta$  ADC measurements in applications where functional safety is required. In addition, the AD7779 SAR ADC includes an internal multiplexer to sense internal nodes.

The AD7779 contains a 2.5 V reference and reference buffer. The reference has a typical temperature coefficient of 10 ppm/ $^{\circ}$ C. The AD7779 offers two modes of operation: high resolution mode and low power mode. High resolution mode provides a higher dynamic range while consuming 10.75 mW per channel; low power mode consumes just 3.37 mW per channel at a reduced dynamic range specification.

The specified operating temperature range is  $-40^{\circ}$ C to  $+105^{\circ}$ C, although the device is operational up to  $+125^{\circ}$ C.

## Features

8-channel, 24-bit simultaneous sampling analog-to-digital converter (ADC)

Single-ended or true differential inputs

Programmable gain amplifier (PGA) per channel (gains of 1, 2, 4, and 8)

Low dc input current

Up to 16 kSPS output data rate (ODR) per channel

Programmable ODRs and bandwidth

Sample rate converter (SRC) for coherent sampling

Sampling rate resolution up to 15.2  $\mu$ SPS

Low latency sinc3 filter path

Adjustable phase synchronization

Internal 2.5 V reference

Two power modes optimizing power dissipation and performance: high resolution mode and low power mode

Low resolution successive approximation (SAR) ADC for system and chip diagnostics

Power supply

Bipolar ( $\pm 1.65$  V) or unipolar (3.3 V) supplies

Digital input/output (I/O) supply: 1.8 V to 3.6 V

Performance temperature range:  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$

Functional temperature range:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

Performance

Combined ac and dc performance

108 dB signal-to-noise ratio (SNR)/dynamic range at 16 kSPS in high resolution mode

## Application

Circuit breakers

General-purpose data acquisition

Electroencephalography (EEG)

Industrial process control



## Related Products



### [ADAS3022BCPZ](#)

Analog Devices, Inc  
LFCSP-40



### [AD574AJNZ](#)

Analog Devices, Inc  
PDIP-28



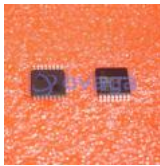
### [AD7938BSUZ](#)

Analog Devices, Inc  
TQFP-32



### [AD7124-8BCPZ-RL7](#)

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### [AD7266BSUZ](#)

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### [AD7401YRWZ](#)

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### [AD7192BRUZ-REEL](#)

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TSSOP-24



### [AD9680BCPZ-500](#)

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