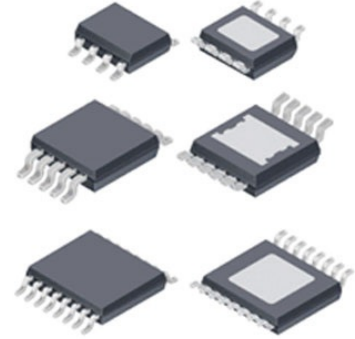


Analogue to Digital Converter, 20 bit, 1 MSPS, Differential, Single Ended, SPI, Single, 2.375 V

Manufacturers	<a href="#">Analog Devices, Inc</a>
Package/Case	MSOP16
Product Type	Data Conversion ICs
RoHS	Pb-free Halide free
Lifecycle	



Images are for reference only

Please submit RFQ for LTC2378CMS-20#PBF or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

The LTC2378-20 is a low noise, low power, high speed 20-bit successive approximation register (SAR) ADC. Operating from a 2.5V supply, the LTC2378-20 has a  $\pm V_{REF}$  fully differential input range with  $V_{REF}$  ranging from 2.5V to 5.1V. The LTC2378-20 consumes only 21mW and achieves  $\pm 2$ ppm INL maximum, no missing codes at 20 bits with 104dB SNR.

The LTC2378-20 has a high speed SPI-compatible serial interface that supports 1.8V, 2.5V, 3.3V and 5V logic while also featuring a daisy-chain mode. The fast 1MSPS throughput with no cycle latency makes the LTC2378-20 ideally suited for a wide variety of high speed applications. An internal oscillator sets the conversion time, easing external timing considerations. The LTC2378-20 automatically powers down between conversions, leading to reduced power dissipation that scales with the sampling rate.

The LTC2378-20 features a unique digital gain compression (DGC) function, which eliminates the driver amplifier's negative supply while preserving the full resolution of the ADC. When enabled, the ADC performs a digital scaling function that maps zero-scale code from 0V to  $0.1 \cdot V_{REF}$  and full-scale code from  $V_{REF}$  to  $0.9 \cdot V_{REF}$ . For a typical reference voltage of 5V, the full-scale input range is now 0.5V to 4.5V, which provides adequate headroom for powering the driving amplifier from a single 5.5V supply.

## Features

1Msps Throughput Rate

Guaranteed 20-Bit No Missing Codes

Low Power: 21mW at 1Msps, 21 $\mu$ W at 1ksps

104dB SNR (Typ) at >

Digital Gain Compression (DGC)

Guaranteed Operation to 85°C

2.5V Supply

Fully Differential Input Range  $\pm$ VREF

VREF Input Range from 2.5V to 5.1V

No Pipeline Delay, No Cycle Latency

1.8V to 5V I/O Voltages

SPI-Compatible Serial I/O with Daisy-Chain Mode

Internal Conversion Clock

16-Lead MSOP and 4mm  $\times$  3mm DFN Packages

## Application

Medical Imaging

High Speed Data Acquisition

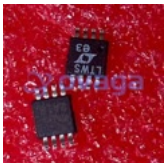
Portable or Compact Instrumentation

Industrial Process Control

Low Power Battery-Operated Instrumentation

ATE

## Related Products



[LTC1860IMS8#PBF](#)

Analog Devices, Inc  
MSOP-8



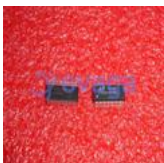
[LT1171CQ](#)

Analog Devices, Inc  
TO-263



[LTC2485IDD#PBF](#)

Analog Devices, Inc  
DFN-10



[LTC2418IGN#PBF](#)

Analog Devices, Inc  
SSOP28



[LTC2351IUH-14#PBF](#)

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QFN-32



[LTC2600CGN#PBF](#)

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[LTC1865AIMS#PBF](#)

Analog Devices, Inc  
MSOP-1