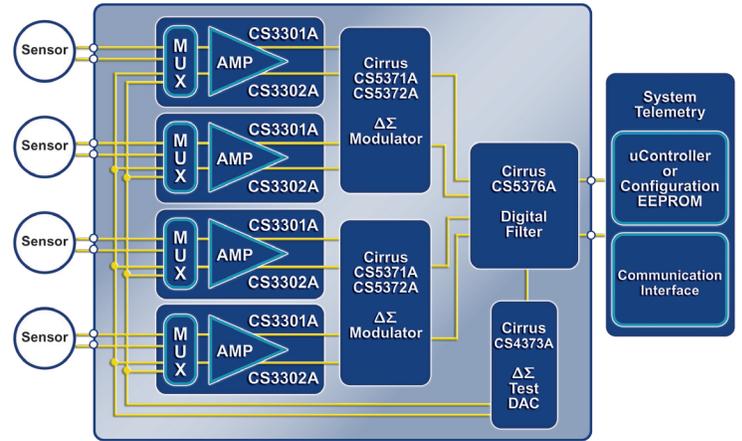


# CS5371A/72A/76A

 7.9 mm  
 7.4 mm  
 CS5371A/72A  
 24-pin SSOP dimensions



## CS5371A/72A FEATURES

- 24-bit analog-to-digital conversion
- Fourth-order Delta-Sigma architecture
- Clock-jitter-tolerant architecture
- Input voltage range 5 V<sub>p-p</sub> differential
- High dynamic range (signal-to-noise ratio)
  - 127 dB at 215 Hz bandwidth (2 ms sampling)
  - 124 dB at 430 Hz bandwidth (1 ms sampling)
- Low Total Harmonic Distortion (THD)
  - -118 dB THD typical
  - -112 dB THD max
- Dual power-supply configuration
  - VA+ = 2.5 V; VA- = -2.5 V; VD = 3.3 V
- Low-power consumption
  - Normal mode: 25 mW per channel
- Small footprint: 24-pin SSOP package

## High-Performance Multichannel Chipset for Seismic & Geophysical Measurements

The CS5371A and CS5372A are single- and dual-channel, high dynamic range, low-power, fourth-order Delta-Sigma modulators. The CS5376A is a multifunction digital filter utilizing a low-power signal processing architecture to achieve efficient filtering for up to four Delta-Sigma modulators. When combined, the CS5371A/72A modulators and the CS5376A digital filter produce a compact, high-resolution, analog-to-digital measurement system ideal for seismic and geophysical applications.

### 24-Bit Delta-Sigma Modulators Provide Exceptional Performance and Low-Power Consumption

The CS5371A and CS5372A provide high dynamic range and low total harmonic distortion, while consuming only 25 mW per channel in normal mode. Additionally, each modulator can be independently placed in a power-down mode using 1 mW per channel and, by halting the input clock, the modulators enter a micropower state consuming only 10  $\mu$ W per channel. Available in a 24-pin SSOP package, the CS5371A and CS5372A provide exceptional performance and low-power consumption in a very small footprint.

# CS5371A/72A/76A



11.7 mm

11.7 mm

CS5376A

64-pin TQFP dimensions

## CS5376A FEATURES

- 1- to 4-channel digital decimation filter
  - Multiple on-chip FIR and IIR coefficient sets
  - Programmable coefficients for custom filters
  - Synchronous operation for simultaneous sampling
- Selectable output word rate
  - 4000, 2000, 1000, 500, 333, 250 SPS
  - 200, 125, 100, 50, 40, 25, 20, 10, 5, 1 SPS
- Digital Calibrations
  - Gain correction
  - Offset correction
  - Offset calibration
- Digital test bit stream signal generator
  - Sine wave or impulse output mode
  - Ideal for use with the CS4373A Seismic Test DAC
- Time-break controller
- 12 general-purpose I/O
- Secondary SPI Port
- Microcontroller or EEPROM configuration
- Low-power consumption
  - 9.5 mW per channel at 500 SPS OWR
- Flexible power supplies
  - I/O interface: 3.3 V or 5.0 V
  - Digital logic core: 3.0 V, 3.3 V, or 5.0 V
- Small footprint: 64-pin TQFP package

## Highly Integrated, Multifunction Quad Decimation Filter Delivers Accurate Results

The CS5376A is a multifunction digital filter utilizing a low-power signal processing architecture to achieve efficient filtering for up to four Delta-Sigma modulators. Digital filter coefficients for the FIR and IIR filters are included on-chip or can be programmed for custom applications. Using the on-chip selectable coefficient sets, the digital filter decimation ratios produce output word rates ranging from 4,000 SPS to 1 SPS, resulting in measurement bandwidths ranging from 1,720 Hz down to 430 mHz.

The CS5376A provides highly integrated peripherals that simplify system design:

- Selectable digital filter decimation ratios
- Offset and gain corrections
- Digital test D/A converter bit-stream signal generator
- Time-break controller
- 12 general purpose I/O pins
- Secondary SPI port

## Total-S. A Complete Seismic Solution.

The CS5371A/72A Delta-Sigma modulators and the CS5376A digital filter are the foundation of our Total-S seismic platform. When combined with the CS3301A/02A differential amplifiers and the CS4373A digital-to-analog converter, this chipset can easily and quickly create a synchronous high-resolution multichannel measurement system for seismic and geophysical data acquisition.