



## **Octal, Simultaneous Sampling ADC Achieves True 18-Bit Performance with Unprecedented Flexibility**

MILPITAS, CA – June 9, 2015 – Linear Technology Corporation introduces the [LTC2348-18](#), an 18-bit, 8-channel simultaneous sampling successive approximation register (SAR) ADC with industry-leading performance and flexibility. While converting eight channels at 200ksps per channel throughput, each SoftSpan™ input can be independently configured on a conversion-by-conversion basis to accept  $\pm 10.24\text{V}$ ,  $0\text{V}$  to  $10.24\text{V}$ ,  $\pm 5.12\text{V}$ , or  $0\text{V}$  to  $5.12\text{V}$  signals. The differential analog inputs operate over a wide  $34\text{V}$  input common mode range, allowing the ADC to directly digitize a variety of signals to simplify the signal-chain design. The input signal flexibility, combined with unrivaled  $\pm 3\text{LSB}$  maximum INL, no missing codes at 18 bits, and 96.7dB SNR, makes the LTC2348-18 ideal for high performance industrial process control, test and measurement, power line monitoring, instrumentation and automatic test equipment applications.

The LTC2348-18 features a precision internal reference with 20ppm/°C maximum temperature coefficient and an integrated reference buffer capable of accurate one-shot measurements, providing space savings in densely packed circuit boards. Optionally, an external 5V reference can be used to expand the analog input range to  $\pm 12.5\text{V}$ . The device dissipates 140mW when converting eight channels simultaneously at 200ksps per channel, and features nap and power-down modes to reduce power dissipation at slower throughputs.

In addition to its unique analog characteristics, the LTC2348-18 offers unmatched digital flexibility, featuring pin-selectable SPI CMOS and LVDS serial interfaces. The wide digital output supply range allows the device to communicate with any CMOS logic between 1.8V and 5V. In CMOS mode, applications can employ between one and eight lanes of serial output data, enabling the user to optimize bus width and data throughput. LVDS mode offers low noise, high speed communications over greater distances using differential signaling. Together, these I/O interface options allow the LTC2348-18 to communicate equally well with legacy microcontrollers and modern FPGAs.

The LTC2348-18 is the first in a family of multichannel 18-/16-bit simultaneous sampling SAR ADCs. All specifications are guaranteed over the extended  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$  temperature range. The LTC2348-18 is available now in a 48-lead, 7mm x 7mm LQFP package, priced starting at \$23.35 each in 1,000-piece quantities. Samples and demo boards may be requested at [www.linear.com/product/LTC2348-18](http://www.linear.com/product/LTC2348-18), or by contacting your local Linear Technology sales office.

**Photo Caption:** 18-Bit, Simultaneous Sampling Octal ADC with SoftSpan Inputs


### Summary of Features: LTC2348-18

- 200ksps per Channel Throughput
- Eight Simultaneous Sampling Channels
- $\pm 3\text{LSB}$  INL Maximum
- Guaranteed 18-Bit, No Missing Codes
- Differential, Wide Common Mode Range Inputs
- Per-Channel SoftSpan Input Ranges:  $\pm 10.24\text{V}$ ,  $0\text{V}$  to  $10.24\text{V}$ ,  $\pm 5.12\text{V}$ ,  $0\text{V}$  to  $5.12\text{V}$
- 96.7dB Single-Conversion SNR (Typical)
- Integrated Reference and Buffer ( $4.096\text{V}$ )
- 2.5V to 5V External Reference Input Range
- SPI CMOS (1.8V to 5V) and LVDS Serial I/O
- 140mW Power Dissipation (Typical)
- 48-Lead (7mm x 7mm) LQFP Package

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

## About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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