



## **16-Bit, 5Msps SAR ADC with Wide Input Common Mode Range Simplifies Analog Front-End Circuitry**

MILPITAS, CA – May 24, 2016 – Linear Technology Corporation introduces the [LTC2311-16](#), a 16-bit, 5Msps successive approximation register (SAR) analog-to-digital converter (ADC) with a wide rail-to-rail input common mode range. The LTC2311-16 features a flexible differential input that accepts analog signals up to the Nyquist frequency. This provides direct conversion of a variety of signal types while maintaining a good signal-to-noise ratio (SNR) of 81.6dB with a 2.2MHz input signal, and achieving a high common mode rejection ratio (CMRR) of 85dB for the same high speed input signal.

Instrumentation and medical applications that require channel-to-channel isolation often use single-channel ADCs to individually isolate front-end circuitry. Each of the ADC channels then requires its own signal conditioning circuitry along with an isolated power source. This circuit is replicated on all channels, so any simplification in the circuit has a profound effect on the complexity of the system. The flexible differential inputs and wide input common mode range of the LTC2311-16 simplify the input signal conditioning design, significantly lowering the required component count, reducing system cost, power consumption and circuit board space.

The LTC2311-16 leads a pin-compatible family of 16-, 14- and 12-bit SAR ADCs with sample rates of 5Msps and 2Msps. These devices integrate a precision internal reference with low drift, guaranteeing 20ppm/°C maximum temperature coefficient to simplify system design. This family can be powered from either a 3.3V or 5V supply, and consumes 30mW with a 3.3V supply and 50mW at 5V. The high speed SPI-compatible CMOS or LVDS serial interface is ideal for highly integrated high speed systems.

The LTC2311-16 is available today in commercial, industrial and automotive (–40°C to 125°C) temperature grades. Other devices in the family will be releasing through 2016. Pricing begins at \$9.95 each in 1,000-piece quantities. Samples and demo boards may be requested at

[www.linear.com/product/LTC2311-16](http://www.linear.com/product/LTC2311-16), or by contacting your local Linear Technology sales office.

**Photo Caption:** 16-Bit 5Msps SAR ADC with Wide Input Common Mode Range


### Summary of Features: LTC2311-16

- 5Msps (LTC2311) or 2Msps (LTC2310) Throughput Rate
- 8V<sub>p-p</sub> Differential Input with Wide Input Common Mode
- 81.6dB SNR, -90dB THD at  $f_{IN} = 2.2\text{MHz}$  (16 Bits)
- $\pm 3\text{LSB}$  INL (Typ),  $\pm 8\text{LSB}$  INL (Max)
- Low Drift (20ppm/°C Max), 2.048V or 4.096V Internal Reference
- Single 3.3V or 5V Supply
- No Cycle Latency (LTC2310)
- Low Power Dissipation of 30mW (3.3V) or 50mW (5V)
- CMOS or LVDS SPI-Compatible Serial I/O
- Guaranteed Operation from -40°C to 125°C
- Small 16-Lead 4mm × 5mm MSOP Package

Pricing shown is for budgetary use only and 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,  $\mu\text{Module}^{\circledR}$  subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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