



15Msps, 18-Bit No Latency SAR ADC Provides 20dB SNR Improvement over Pipelined ADCs

MILPITAS, CA – September 29, 2015 – Linear Technology Corporation introduces the [LTC2387-18](#), an ultrafast 15Msps, 18-bit successive approximation register (SAR) analog-to-digital converter (ADC) with no cycle latency and no pipeline delay. The LTC2387-18 digitizes wideband analog signals up to the Nyquist frequency with very low distortion. Applications ranging from communications, high speed imaging and instrumentation that traditionally utilize fast throughput pipelined ADCs can now achieve 20dB signal-to-noise ratio (SNR) improvement compared to pipelined ADC architectures.

The LTC2387-18 achieves an SNR of 95.7dB and realizes –101dB total harmonic distortion (THD) while digitizing a 1MHz analog input signal. The high SNR and low distortion performance, combined with fast digitizing throughput, enable the ADC to measure very low signal levels with greater precision and accuracy, thus improving image contrast and definition in high end imaging applications. In addition, the no latency operation enables use in data acquisition systems that require fast control loops. To limit noise introduced from the digital outputs, the sampled data of this ADC is communicated via single- or dual-lane serial LVDS outputs to the host processor, providing good noise immunity for noise-sensitive applications.

The LTC2387-18 is the lead product in a pin-compatible family of 18- and 16-bit SAR ADCs with sampling rates ranging from 5Msps to 15Msps, releasing through 2015. The LTC2387-18 is now available in a 32-lead 5mm × 5mm plastic QFN package, specified over the commercial and industrial temperature ranges, priced starting at \$38.95 in 1,000-piece quantities. Samples and demo boards may be requested at www.linear.com/product/LTC2387-18, or by contacting your local Linear Technology sales office.

Photo Caption: 15Msps 18-Bit SAR ADC with No Cycle Latency

Summary of Features: LTC2387-18

- 15Msps Throughput Rate with No Cycle Latency
- 95.7dB SNR & 102dB SFDR at $f_{IN} = 1\text{MHz}$
- Nyquist Sampling up to 7.5MHz Input
- $\pm 3\text{LSB}$ Maximum INL
- 8.192V_{P-P} Differential Inputs
- Internal Reference with 20ppm/°C Max Drift
- One- or Two-Lane Serial LVDS Outputs
- 10Msps (LTC2386) & 5Msps (LTC2385) 18-Bit & 16-Bit Versions
- 32-Pin 5mm × 5mm QFN 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, $\mu\text{Module}^{\circledR}$ subsystems, and wireless sensor network products. For more information, visit www.linear.com

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