



## **Quad/Dual 14-Bit, 125Msps ADCs Dissipate One-Third the Power**

MILPITAS, CA – July 28, 2009 – Linear Technology Corporation announces a family of 24 ultralow power 14-bit/12-bit, 125Msps to 25Msps, quad and dual ADCs that dissipate as little as one-third the power of competing ADCs. The flagship ADC is the LTC2175-14, a quad 14-bit, 125Msps ADC that dissipates only 558mW (140mW per channel). The LTC2175 significantly reduces system power without sacrificing AC performance, offering signal to noise ratio (SNR) performance of 73.4dB and spurious free dynamic range (SFDR) of 88dB at baseband. Operating from 1.8V analog and digital supplies, the LTC2175 includes a sleep mode that reduces power dissipation to just 1mW. Whether operating at full speed or in sleep mode, this ADC significantly lowers the power budget for highspeed multichannel designs such as multiple-input multiple-output (MIMO) WiMAX/LTE and 3G basestations, portable medical imaging and non-destructive testers.

Data is output from the LTC2175 in serial LVDS format to minimize the number of data lines. At 125Msps, each channel outputs two bits at a time, using two lanes per ADC. At lower sample rates, a one bit per channel option is available. The LTC2175 offers serial data communication and four ADCs in a small 7mm x 8mm QFN package, requiring less board area for data I/O lines and simplified layout.

The LTC2175 includes an SPI-compatible interface that allows users to choose between a variety of data settings that reduce digital feedback and simplify design. Options include a data output randomizer that reduces digital feedback, seven programmable LVDS output current levels, internal 100Ohm LVDS output termination resistors, and digital output test patterns. These settings can be programmed via SPI or hard-wired for a reduced set of operating modes.

The LTC2175 is part of a family of pin-compatible quad ADCs, offering 14-bit and 12-bit resolution from 25Msps up to 125Msps. All devices are supported with demonstration boards and free software for quick device evaluation, available online at [www.linear.com](http://www.linear.com) and [www.linear.com/designtools/software](http://www.linear.com/designtools/software). 14-bit and 12-bit dual versions of this family in

6mm x 6mm QFN packages will be available in production quantities by October. For more information, visit [www.linear.com](http://www.linear.com).

Product	ADCs	Resolution	Sample Rate (Msps)	Power Consumption (mW/channel)	SNR $f_{IN} = 70\text{MHz}$	Avail.	1k Price
LTC2175-14	4	14	125	140	73.2dB	Now	\$117.00
LTC2174-14	4	14	105	113	73.2dB	Now	\$99.00
LTC2173-14	4	14	80	94	72.9dB	Now	\$63.00
LTC2172-14	4	14	65	78	73.7dB	Oct	\$57.04
LTC2171-14	4	14	40	51	73.1dB	Oct	\$40.16
LTC2170-14	4	14	25	41	72.1dB	Oct	\$32.63
LTC2175-12	4	12	125	136	70.7dB	Now	\$68.63
LTC2174-12	4	12	105	110	70.7dB	Now	\$58.50
LTC2173-12	4	12	80	92	70.5dB	Now	\$44.33
LTC2172-12	4	12	65	77	70.9dB	Oct	\$31.68
LTC2171-12	4	12	40	50	70.6dB	Oct	\$22.32
LTC2170-12	4	12	25	40	70.1dB	Oct	\$21.38
LTC2268-14	2	14	125	150	73.2dB	Now	\$78.00
LTC2267-14	2	14	105	122	73.2dB	Now	\$66.00
LTC2266-14	2	14	80	102	73.9dB	Now	\$42.00
LTC2265-14	2	14	65	86	73.7dB	Oct	\$38.03
LTC2264-14	2	14	40	57	73.1dB	Oct	\$26.78
LTC2263-14	2	14	25	47	72.1dB	Oct	\$21.75
LTC2268-12	2	12	125	146	70.7dB	Now	\$45.75
LTC2267-12	2	12	105	119	70.7dB	Now	\$39.00
LTC2266-12	2	12	80	100	70.5dB	Now	\$29.55
LTC2265-12	2	12	65	84	70.9dB	Oct	\$21.12
LTC2264-12	2	12	40	56	70.6dB	Oct	\$14.88
LTC2263-12	2	12	25	47	70.1dB	Oct	\$14.25


**Photo Caption:** 14-Bit 125Msps Quad ADC Dissipates 140mW per Channel

### Summary of Features: LTC2175/LTC2268 Families

- Quad/Dual-Channel Simultaneous Sampling ADCs (LTC2175/LTC2268)
- 73.4dB SNR (14-Bit Resolution)
- 88dB SFDR
- Low Power: 558mW (140mW/channel) at 125Msps (LTC2175)
- Single 1.8V Analog & Digital Supplies
- Serial LVDS Outputs
- Selectable Input Ranges:  $1V_{P-P}$  to  $2V_{P-P}$
- 800MHz Full-Power Bandwidth S/H
- Optional Data Output Randomizer
- Optional Clock Duty Cycle Stabilizer
- 1mW Sleep and 50mW Nap Modes
- Serial SPI Port for Configuration
- Pin Compatible 14-Bit and 12-Bit Versions
- 52-Pin (7mm x 8mm) QFN Package (Quad Versions)
- 40-Pin (6mm x 6mm) QFN Package (Dual Versions)

## About Linear Technology

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, uModule<sup>®</sup> products, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems.

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