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16-Bit, 105Msps Low-Noise ADC Achieves 81.2dB SNR at Half the Power 1200mW

MILPITAS, CA – February 19, 2008 – Linear Technology introduces the LTC2217, a low noise, high performance 16-bit, 105Msps Analog to Digital Converter (ADC) with 81.2dBFS Signal-to-Noise Ratio (SNR) and 100dBc Spurious Free Dynamic Range (SFDR). Ultra-low jitter helps maintain the high SNR at high input frequencies, yielding 80.4dBFS SNR at 70MHz, while the high linearity sample/hold circuitry allows for low distortion of 92dBFS at 70MHz. The single 3.3V power supply requires less support circuitry than alternative ADCs that require two supplies. Sampling at 105Msps the LTC2217 delivers best-in-class SNR and SFDR performance while consuming only 1190mW, half the power of competing ADCs.

The LTC2217 can interface to a variety of digital systems with multiple digital output modes standard LVDS, low power LVDS, straight CMOS and demultiplexed CMOS. Additionally, an easy to use digital output randomizer is available which can dramatically reduce the effects of digital feedback from the digital outputs to the analog inputs. A separate output power supply allows the CMOS output swing to be as low as 0.5V for further noise enhancement. The LTC2217 also features an optional internal dither circuit for improved SFDR performance for low-level input signals. Both features, only offered in Linear Technology ADCs, enhance the LTC2217's overall distortion performance in high sensitivity receiver applications.

The LTC2217 is pin-compatible with the existing 16-bit, 130Msps LTC2208 and 160Msps LTC2209 ADCs. In addition, the 16-bit 80Msps LTC2216, and 65Msps LTC2215 are

also available. These low-noise 16-bit ADCs are well suited for communications applications, ATE, as well as high-end medical imaging equipment.

In addition to the new low-noise ADCs introduced today, Linear Technology currently offers a 16-bit, high performance ADC family sampling from 10Msps to 105Msps with CMOS outputs in a 7mm x 7mm QFN package. Linear's entire high-speed ADC portfolio features industry-leading AC performance, extremely low power consumption and pin-compatibility, providing easy migration from 10-bit to 12- or 14-bits, at various sample rates. All these ADCs can sample as low as 1Msps and as high as the specified maximum sampling rate. The system footprint of the whole ADC family is exceptionally small, compared to competitive products since fewer external bypass capacitors are needed.

The LTC2217, LTC2216 and LTC2215 are priced at \$68.00, \$58.00 and \$52.00 respectively, in 1,000-piece quantities.

The following table provides an overview of the entire 16-bit high-performance family.

Part Number	Resolution	Speed	Power	SNR	Package	Price (1k)
LTC2209	16-bit	160Msps	1450mW	77.1dB	9x9 QFN	\$72.50
LTC2208	16-bit	130Msps	1250mW	77.7dB	9x9 QFN	\$65.00
LTC2217	16-bit	105Msps	1190mW	81.2dB	9x9 QFN	\$68.00
LTC2207	16-bit	105Msps	850mW	77.9dB	7x7 QFN	\$56.67
LTC2216	16-bit	80Msps	970mW	81.3dB	9x9 QFN	\$58.00
LTC2206	16-bit	80Msps	640mW	77.9dB	7x7 QFN	\$48.33
LTC2215	16-bit	65Msps	700mW	81.5dB	9x9 QFN	\$52.00
LTC2205	16-bit	65Msps	450mW	79.0dB	7x7 QFN	\$43.33
LTC2204	16-bit	40Msps	350mW	79.1dB	7x7 QFN	\$35.00
LTC2203	16-bit	25Msps	220mW	81.6dB	7x7 QFN	\$30.00
LTC2202	16-bit	10Msps	150mW	81.6dB	7x7 QFN	\$25.00


Photo Caption: 16-bit Low Noise ADCs with Internal Dither & Digital Output Randomizer

Summary of Features: LTC2217 Low-Noise ADC Family

- Sample Rate: 105Msps/80Msps/65Msps
- 80.4dB SNR up to 70MHz Input
- 92dB SFDR up to 70MHz Input
- Low Power Dissipation: 1190mW/970mW/700mW
- 85fs_{RMS} Jitter
- 2.75Vp-p Input Range
- Optional Internal Dither
- Optional Data Output Randomizer
- LVDS or CMOS Outputs
- 400MHz Full Power Bandwidth S/H
- Single 3.3V Supply
- CMOS Output Supply Voltage Range: 0.5V to 3.6V
- Shutdown Mode
- Clock Duty-Cycle Stabilizer
- 64-pin, 9mm x 9mm QFN Package
- Pin Compatible Family
 - 160Msps: LTC2209
 - 130Msps: LTC2208
 - 105Msps: LTC2217
 - 80Msps: LTC2216
 - 65Msps: LTC2215

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™ 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. For more information, visit www.linear.com.

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