



## **Very Fast Low Distortion, Low Noise Differential Amplifiers/ADC Drivers Simplify System Design**

MILPITAS, CA – November 14, 2006 – Linear Technology Corporation introduces the LT6402 and LT6411, two new differential amplifiers suitable as high-speed ADC drivers, twisted-pair line drivers and single-ended to differential signal converters. These new products utilize a novel design topology to integrate precision gain-setting resistors on-chip. In addition to simplifying system design and reducing external component count, these devices optimize distortion power and noise performance, critical for high-speed communications applications.

With a -3dB bandwidth of 300MHz, the LT6402 is available in three fixed gain options, 6dB, 12dB, and 20dB. Exceptionally low noise and low distortion make the LT6402 ideal for communications transceiver applications as a differential 12- to 14-bit ADC driver, a general-purpose differential gain block, or in other applications requiring differential drive. The LT6402 further minimizes external circuitry and simplifies design by providing an on-chip filter and an output common mode voltage pin ( $V_{OCM}$ ).

The LT6411 is a dual-selectable gain amplifier that can be configured to drive differential signals. The gain of each amplifier can be independently selected, resulting in differential gains of -1, +1, and +2 (0dB or 6dB). With a -3dB bandwidth of 650MHz and a slew rate of 3300V/us, the LT6411 achieves very low distortion for input signals up to 70MHz, while consuming only 16mA supply current. During periods of inactivity, the LT6411 can be disabled, dropping current consumption to less than 0.35mA max per amplifier. The LT6411 can be used on split supplies as large as  $\pm 6.3V$  or on a single supply as low as 4.5V.

“The new LT6411 and LT6402 provide system designers with the flexibility and performance they need to drive high-speed communications and video signals in a wide range of applications,” says Brian Black, product marketing manager for Linear Technology’s Signal Conditioning product group. “These devices are well suited for driving high-speed ADCs such as Linear Technology’s 14-bit 80Msps LTC2249.”

The LT6402 and LT6411 are available now, with prices starting from \$2.39 each in quantities of 1,000 pieces.

## **Photo Caption:** Differential Fixed-gain ADC Drivers Simplify System Design

### **Summary of Features: LT6402-6, LT6402-12, LT6402-20**


- Fixed Gain of 6, 12, and 20dB
- 300 MHz –3dB Bandwidth
- OIP3 = 48.5dBm,  $e_n = 1.9\text{nV}/\sqrt{\text{Hz}}$  (LT6402-20, 20MHz)
- Minimal External Components Required
- Additional Filtered Outputs
- Adjustable Output Common Mode Voltage
- 16-Lead 3mm x 3mm QFN Package

### **Summary of Features: LT6411**

- 650MHz –3dB Bandwidth
- High Slew Rate: 3300V/us
- User Selectable Gain: +1, +2 and –1
- No External Resistors Required
- IM3 = –83dBc at 70MHz
- Low Supply Current: 16mA total
- Wide Supply Range:  $\pm 2.25\text{V}$  (4.5V) to  $\pm 6.3\text{V}$  (12.6V)
- 3mm x 3mm 16-Pin QFN Package

### **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, 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](http://www.linear.com)

LT, LTC, LTM and  are registered trademarks of Linear Technology Corp.

### **Press Contacts:**

John Hamburger, Director Marketing Communications  
[jhamburger@linear.com](mailto:jhamburger@linear.com)  
Tel 408-432-1900 ext

Doug Dickinson, Media Relations Manager  
[ddickinson@linear.com](mailto:ddickinson@linear.com)  
408-432-1900