

LTC News for Immediate Release

For more information, tel. 408-432-1900
John Hamburger, Dir. Mktg. Communications, ext.2419
Doug Dickinson, Media Relations Mgr., ext. 2233
www.linear.com

**Direct Conversion Modulator Boosts
3G Cellular Basestation Transmitter Performance**

MILPITAS, CA – November 22, 2004 - A new direct conversion modulator from Linear Technology enables the design of next generation, less costly 3G wireless basestation transmitters. The LT5528 is a direct I-Q modulator with uncompromising performance, enabling more compact basestation transmitter designs at lower system cost. The LT5528 is targeted for high performance wireless infrastructure applications, including W-CDMA, TD-SCDMA, GSM, and PHS. It is also suitable for broadband fixed wireless access, as well as point-to-point radio links and other high performance radios.

The LT5528 incorporates a matched pair of double-balanced mixers which form a carrier suppressed, image reject I-Q (In phase and Quadrature phase) modulator. The I and Q inputs accept complex modulation signals from the baseband circuitry, and upconvert them directly to RF (1.5GHz to 2.4GHz) using a LO (Local Oscillator) operating at the same frequency. This effectively eliminates one to two stages of frequency upconversion in the radio path, greatly reducing the number of external components and lowering costs.

The LT5528's I/Q gain matching (to within +/- 0.1dB) results in a typical carrier suppression of -47dBm at 2.14GHz. The precision 0°/ 90° phase shift of the on-board LO phase splitter produces 45dBc image rejection at 2.14GHz. The modulated RF I and Q signals are combined in an on-chip balanced RF transformer at the single-ended output. The LT5528's 50-Ohm RF port eliminates the need for external impedance matching components. All other signal inputs and outputs are also 50-Ohm matched, thus simplifying the design task.

Careful attention is paid to the design and biasing of the mixer to optimize modulator linearity, resulting in an OIP3 (Output Third-Order Intercept) of 20.5dBm at 2.14GHz. Combined with a low noise floor of -159dBm/Hz, the LT5528 achieves a best-in-class ACPR (Adjacent Channel Power Ratio) performance of -66dBc and an Alternate Channel Power Ratio of -68dBc, measured with a 4-channel W-CDMA signal. Single channel ACPR performance extends higher still to -73.5dBc. This ensures ample design margin for basestation manufacturers to comply with the standards specifications.

(more...)

The LT5528 operates from a single 5V supply. The device comes in a 16-pin 4mm x 4mm surface mount QFP package. The LT5528 is priced at \$5.95 in 1000-piece quantities. The product is available from stock.

Summary of Features: LT5528

- | | |
|--|-----------------|
| • Frequency Range | 1.5GHz – 2.4GHz |
| • Output 3 rd Order Intercept | +20.5 dBm |
| • Noise Floor | -159 dBm/Hz |
| • ACPR 1-Ch W-CDMA | -73.5dBc |
| • ACPR 4-Ch W-CDMA | -66 dBc |
| • Image Rejection | 45 dB |
| • LO Suppression | -47 dBm |

COMPANY BACKGROUND: Linear Technology Corporation was founded in 1981 as a manufacturer of high performance linear integrated circuits. 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, contact:

Doug Dickinson, Media Relations Manager

Linear Technology Corporation

1630 McCarthy Boulevard

Milpitas, CA 95035-7417

ddickinson@linear.com

408-432-1900

READER SERVICE: Call toll-free 1-800-4-LINEAR (for literature only), or go to the company's web site: **<http://www.linear.com>**

Note: LT, LTC, Burst Mode and  are registered trademarks of Linear Technology Corp.