

LTC News for Immediate Release

Press Contact: John Hamburger
Dir. Marketing Communications
Tel: 408-432-1900 Ext. 2419
www.linear.com

**New 40MHz - 900MHz Quadrature Demodulator Offers
High Spurious-Free Dynamic Range**

MILPITAS, CA – September 29, 2004 – A new, very high linearity and low noise I/Q demodulator from Linear Technology Corporation provides the performance needed for direct conversion and IF conversion of radio signals to baseband for high performance receivers. The LT5517 has an IIP3 (Input Third-Order Intercept Point) of 23.5dBm and a Noise Figure of 9.5dB at 200MHz, allowing the robust detection of weak signals, even in the presence of high level interference. This performance results in a Spurious Free Dynamic Range (SFDR) exceeding 80dB. The LT5517 integrates a precision 0° and 90° phase splitter, providing accurate I (In phase) and Q (Quadrature phase) demodulation of RF signals, ranging from 40MHz to 900MHz, directly to baseband in a compact solution.

The LT5517 is well suited for IF and RF demodulators in high performance, wireless infrastructure receiver applications. Other applications include micro-basestations, repeater cells, RFID readers, and broadband fixed wireless access.

The LT5517 offers a high level of integration, incorporating a pair of matched high linearity mixers, with an on-chip quadrature phase generator and splitter. The I and Q signal paths are internally gain matched to 0.03dB typical, with a typical phase mismatch of 0.7 degree, resulting in highly accurate I and Q demodulation. The differential I and Q outputs have low DC offset, typically 0.5mV, and built-in 130MHz low-pass filters to remove out-of-band noise. The LT5517 provides a compact and robust receiver solution.

The internal quadrature phase splitter uses a Local Oscillator (LO) derived from a divide-by-two circuit. Correspondingly, the 2XLO input port accepts a signal at twice the LO frequency, thus minimizing LO leakage to the RF port. Moreover, the LT5517 has excellent port-to-port RF leakage, reducing external RF filtering requirements. The 2XLO input requires only a -5dBm drive level, and is internally matched to 50 Ohms, thus providing a simple, single-ended interface.

(more...)

LT5517 operates from a single 4.5 to 5.25V supply, drawing a power supply current of 90mA. An Enable pin allows the device to power down, drawing a typical OFF-state current of 0.1uA. Turn-on and turn-off time is typically under 300ns. The device is offered in a 16-lead 4mm x 4mm surface mount QFN package. Priced at \$7.40 each in 1,000 piece quantities, the product is available from stock.

Summary of Features: LT5517

- Wide 40MHz to 900MHz RF input frequency range
- High IIP3: 23.5dBm at 200MHz
- High IIP2: 60dBm at 200MHz
- Noise Figure: 9.5dB at 200MHz
- Excellent I/Q Gain Mismatch: 0.3dB Max
- Excellent I/Q Phase Mismatch: 0.7° Typ.

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:

John Hamburger, Director Marketing Communications


Linear Technology Corporation

1630 McCarthy Boulevard

Milpitas, CA 95035-7417

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 and  are registered trademarks of Linear Technology Corp.