



2.7GHz, 60dB Mean-Squared Power Detector Responds in 500ns

MILPITAS, CA – December 3, 2007 – A new wide dynamic range mean-squared RF detector from Linear Technology sets a new level of accuracy and speed performance. The LT5570 provides accurate RMS (Root-Mean-Squared) power measurement of a 40MHz to 2.7GHz AC signal over 60dB dynamic range, even with a modulation crest-factor of up to 12 dB. It offers best-in-class measurement accuracy of +/- 0.5dB over its full dynamic range and over a temperature range of -40°C to +85°C. Moreover, the device allows exceptionally fast response with a full-scale rise time of 500 ns.

As nascent next-generation wireless standards such as mobile WiMAX and LTE (Long-Term Evolution) adopt more complex modulation schemes, combining OFDM (Orthogonal Frequency Division Multiplexing) and QAM (Quadrature Amplitude Modulation) to boost the data rate, it becomes increasingly difficult to accurately measure these high crest-factor signals. This problem is not just confined to wireless infrastructure, as many other wireless systems are similarly constrained by limited spectrum bandwidth. As a result, there is an ongoing need for higher order modulation to increase data rates. Cable networks, microwave datalinks, satellite communications, and military radios have similar needs, and the LT5570 is designed to meet these emerging challenges.

The LT5570 provides a DC output proportional to the RMS value of the input signal power. Even if the input waveform has high crest-factor content, such as a 4-carrier W-CDMA modulated waveform, its RMS conformance accuracy is typically within 0.2 dB, compared to that of a CW (continuous waveform) power. The device offers 61 dB dynamic range at 880MHz, and 51 dB at 2.14GHz. Its linear DC output is proportional to the input power in dBm with a scaling factor of 36.5 mV/dB, typical. Minimum sensitivity is -53 dBm at 880MHz, and -43 dBm at 2.14GHz. The device offers exceptional linearity, deviating less than ± 0.5 dB from the ideal log-linear straight line, and over the device's operating temperature extremes.

The LT5570 operates from a single 5V supply, drawing a quiescent supply current of 26.5 mA. A shutdown feature is provided, reducing supply current to 0.1 uA.

The device comes in a 10-lead 3mm x 3mm DFN surface mount package. Pricing starts at \$5.75 each in 1,000 piece quantities. The product is available immediately from stock.


Photo Caption: Accurately Measure High Crest-Factor RF Signal Power

Summary of Features: LT5570

- Frequency Range: 40 MHz to 2.7 GHz
- Log-Linear Dynamic Range
 - @ 880 MHz: 60 dB
 - @ 2.14 GHz: 50 dB
- Accuracy Over Temperature (-40°C to +85°C): ± 0.3 dB
- Fast Response Rise Time: 500 ns
- Small Package: 3mm x 3mm DFN

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.

LT, LTC, LTM and  are registered trademarks and uModule is a trademark of Linear Technology Corp.

Press Contacts:

John Hamburger, Director Marketing Communications
jhamburger@linear.com
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
Tel: 408-432-1900 ext 2233