



Wideband Active Mixer Tops +30dBm IIP3 with 0dB Conversion Gain

MILPITAS, CA – January 30, 2014 – Linear Technology announces the [LTC5577](#), a 300MHz to 6GHz active downconverting mixer with outstanding +30dBm IIP3 (Input Third Order Intercept) and 0dB conversion gain. The LTC5577 has wide operating frequency capability, covering all cellular bands from 450MHz to 3.6GHz with a single part. Additionally, its IF output port, usable from 1MHz to 1.5GHz, delivers flat conversion gain performance to over 600MHz bandwidth, supporting LTE and LTE-Advanced base stations, as well as other wideband receiver applications. Its exceptionally low $M \cdot RF \times N \cdot LO$ mixing spur products are ideal for low distortion receivers and improve the distortion correction performance of digital predistortion (DPD) receivers. Additionally, its very low LO to RF leakage enable receivers to satisfy spurious emissions requirements with little or no RF input filtering. Moreover, the LTC5577's RF input is designed to withstand strong in-band blocking signals while delivering best-in-class noise figure, ensuring robust receiver sensitivity in the presence of interference.

The LTC5577 has integrated wideband RF and LO input transformers, enabling the mixer to operate 50 Ohm single-ended from 700MHz to 4.3GHz continuously with the same external matching. As a result, minimum external components are needed, reducing system cost and solution size. The LO input remains 50 Ohm terminated regardless of whether the device is powered on or off, and hence can be TDD (Time Division Duplex) enabled and disabled rapidly without causing disturbance that can unlock a PLL (phase-locked loop). The LO input is buffered, requiring only 0dBm drive level and thus can be driven directly from a VCO circuit with minimum or no frequency pulling. All these features combine to yield a cost-effective solution that is space efficient and easy to design.

Aside from cellular base station applications, the LTC5577 is also well suited for a wide range of radios requiring robust performance, such as cable TV transceivers, wideband military radios, broadband VHF/UHF white space broadcast radios, software-defined radios, RF test instrumentation, wireless repeaters and satellite communications.

The LTC5577's 4mm x 4mm QFN package provides a compact footprint. The product is specified for case operating temperature from -40°C to 105°C, ensuring reliable operation in harsh environments. Powered with a single 3.3V supply at 180mA, the LTC5577 consumes the lowest power in the +30dBm IIP3 mixer class. The device can be conveniently shut down with the enable control pin. When disabled, the device saves power by drawing a maximum of 200µA leakage current. The LTC5577, priced starting at \$6.75 each in 1,000-piece quantities, is available immediately in production quantities. For more information, visit www.linear.com/product/LTC5577


Photo Caption: 300MHz to 6GHz High Signal Level Active Mixer

Summary of Features: LTC5577

Operating Frequency	300MHz to 6GHz
IF Frequency Bandwidth	1MHz to 1500MHz
Input IP3	+30.2dBm
Conversion Gain	0.7dB
Noise Figure (NF)	11.8dB
NF with 5dBm Blocker	15.8dB
Power Consumption	594mW

About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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