



High Linearity Downconverting Mixers Improve Performance & Reduce Power Consumption in 3G & 4G Wireless Basestations

MILPITAS, CA – October 28, 2009 – Linear Technology announces the LTC554x family of four new high dynamic range downconverting mixers covering the 700MHz to 4GHz wireless infrastructure frequency range. The LTC554x mixers offer outstanding IIP3 (input third-order intercept) of 26dBm, low noise figures of 9-10dB and high conversion gain of 8dB, enabling excellent dynamic range performance for both main receivers and digital predistortion receivers. The LTC554x family of mixers provides best-in-class capability to maintain a low noise figure in the presence of strong blocking interferers, and significantly enhancing receiver sensitivity and robustness. Unlike other mixers in their class, the LTC554x family operates on a single 3.3V supply without compromising performance, while reducing power consumption by 34% compared to the closest competing solution.

Part Number	RF Frequency Range	Applications
LTC5540	600MHz – 1.3GHz	700MHz LTE, 850MHz GSM / EDGE, CDMA
LTC5541	1.3GHz – 2.3GHz	LTE, W-CDMA, TD-SCDMA, CDMA2k, 1800GSM/EDGE
LTC5542	1.6GHz – 2.7GHz	W-CDMA, TD-SCDMA, CDMA2k, LTE, WiMAX
LTC5543	2.3GHz – 4.0GHz	LTE, WiMAX

The LTC554x mixers are designed to satisfy the requirements of nascent 4th generation LTE (Long-Term Evolution) cellular and WiMAX basestations, as well as 3G CDMA, WCDMA, TD-SCDMA, UMTS and GSM/EDGE platforms. The mixers' robust performance also enhances other wireless systems such as point-to-point microwave systems, cellular repeaters, public safety radios and military communication systems.

The LTC554x mixers contain an integrated IF amplifier, LO buffer, LO switch and RF balun transformers. Each mixer's RF input is single ended, 50Ohm matched. Two single-ended LO inputs with high isolation are provided for frequency hopping applications. Each LO input is also single ended, always 50Ohm matched regardless of whether the mixer is active or powered down to avoid unlocking of the PLL (Phased-Lock Loop). The LO input requires only 0dBm drive level. All of these features facilitate a compact solution with minimal external components.

The LTC554x mixers have identical pinouts, allowing designers to share PC board layouts across multiple platforms operating in different frequency bands. This helps users reduce total ownership costs and speed time to market. The mixers' pinouts are also similar to common industry footprints and pinouts, allowing ease of adoption while improving performance and reducing power consumption.

The LTC554x mixers operate on a single 3.3V supply, drawing a supply current of 200mA. The LTC554x devices have a power-down feature with turn-on and turn-off time of 2us and 3us, respectively. When disabled, the ICs consume a maximum of 500uA. The products are offered in a 20-lead, 5mm x 5mm QFN surface mount package. Production will begin in November 2009, starting with the release of the LTC5541, followed by LTC5543, LTC5540 and the LTC5542. All products are sampling now and will be available in production quantities by February 2010. The LTC5541 is priced starting at \$6.50 each. For more information, visit www.linear.com.


Photo Caption: High Dynamic Range Downconverting Mixers

Summary of Features: LTC554x

Parameters	LTC5540	LTC5541	LTC5542	LTC5543
Operating Frequency	600MHz – 1.3GHz	1.3GHz – 2.3GHz	1.7GHz – 2.7GHz	2.3GHz – 4.0GHz
Input IP3	25.8dBm	26.4dBm	26.8dBm	24.5dBm
Conversion Gain	8dB	8.1dB	8dB	8.4dB
Noise Figure (NF)	10.1dB	9.5dB	9.9dB	10.2dB
NF @5dBm Blocking	17.7dB	16dB	17.3dB	17.5dB
Power Consumption	0.66W	0.63W	0.66W	0.66W

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.

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Press Contacts:

North America / Worldwide

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

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

UK & Nordic

Alan Timmins
alan@ezwire.com
Tel: +44-1-252-629937