



LTC5540

0.6GHz to 1.3GHz High Dynamic Range Downconverting Mixer

FEATURES

- Conversion Gain: 7.9dB at 900MHz
- IIP3: 25.9dBm at 900MHz
- Noise Figure: 9.9dB at 900MHz
- 17.7dB NF Under 5dBm Blocking
- High Input P1dB
- 3.3V Supply, 640mW Power Consumption
- Shutdown Pin
- 50Ω Single-Ended RF and LO Inputs
- LO Inputs 50Ω Matched when Shutdown
- High Isolation LO Switch
- 0dBm LO Drive Level
- High LO-RF and LO-IF Isolation
- Small Solution Size
- 20-Lead (5mm × 5mm) QFN package

APPLICATIONS

- Wireless Infrastructure Receivers (LTE, GSM, CDMA)
- High Dynamic Range Downmixer Applications

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DESCRIPTION

The LTC[®]5540 is part of a family of high dynamic range passive downconverting mixers covering the 600MHz to 4GHz frequency range. **The LTC5540 is optimized for 0.6GHz to 1.3GHz RF applications. The LO frequency must fall within the 0.7GHz to 1.2GHz range for optimum performance.** A typical application is a LTE or GSM receiver with a 700MHz to 915MHz RF input and high-side LO.

The LTC5540 is designed for 3.3V operation, however; the IF amplifier can be powered by 5V for the highest P1dB. An integrated SPDT LO switch with fast switching accepts two active LO signals, while providing high isolation.

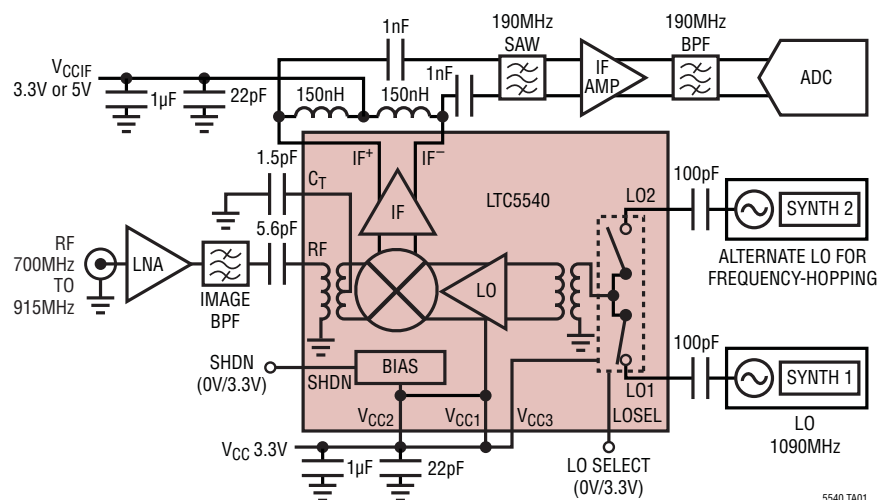
The LTC5540's high conversion gain and high dynamic range enable the use of lossy IF filters in high-selectivity receiver designs, while minimizing the total solution cost, board space and system-level variation.

High Dynamic Range Downconverting Mixer Family

PART#	RF RANGE	LO RANGE
LTC5540	600MHz – 1.3GHz	700MHz – 1.2GHz
LTC5541	1.3GHz – 2.3GHz	1.4GHz – 2.0GHz
LTC5542	1.6GHz – 2.7GHz	1.7GHz – 2.5GHz
LTC5543	2.3GHz – 4GHz	2.4GHz – 3.6GHz

TYPICAL APPLICATION

Wideband Receiver



Wideband Conversion Gain, IIP3 and NF vs RF Input Frequency

