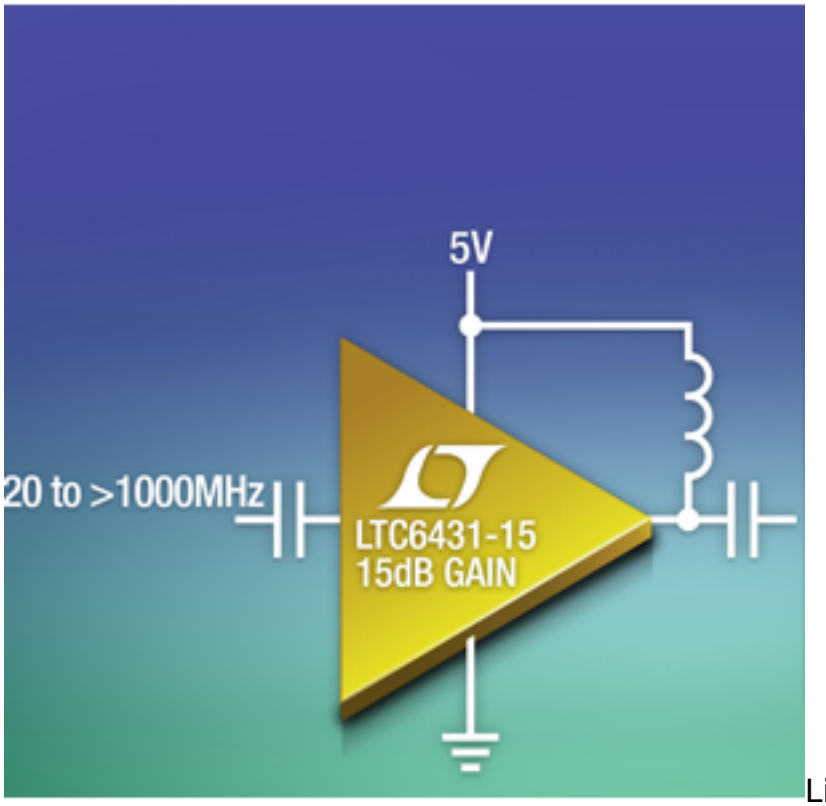
50Ohm IF gain block provides 47dBm OIP3, 15.5dB gain, consumes only 450mW



Linear Technology announces the LTC6431-15 [1], a 15.5dB gain block that achieves high dynamic range in a 50Ohm environment from 20MHz to 1GHz and beyond. It is manufactured on an advanced SiGe process and is available in two performance grades. At 240MHz, the A-grade OIP3 is typically 47dBm and is fully tested and guaranteed to be a minimum of 44dBm. Noise Figure is 3.33 dB, which corresponds to an input-referred amplifier noise of 1nV/√Hz. Power consumption is less than 450mW. This combination of low noise and low distortion provides the wide dynamic range needed for high performance intermediate frequency communications and CATV applications.

The LTC6431-15 is easy to use. It is unconditionally stable and the input and output are internally matched to 50Ohm, so all that is needed externally are DC blocking capacitors and an RF bias choke. It provides greater than 2V linear output swing operating on a single 5V supply. P1dB is typically 20.6dBm and linearity is maintained to 17dBm output power.

“The LTC6431-15 is Linear Technology’s first RF-style gain block, and unique in achieving GaAs-level performance using a SiGe process,” says Erik Soule, Vice President of Signal Conditioning & High Frequency Products. “The result is outstanding AC performance, excellent repeatability, and stability over temperature, supply voltage, frequency, and output power.

The LTC6431-15 is available in a 4mm x 4mm QFN-24 package with an exposed pad

for best thermal performance and low inductance. It is specified for operation from -40°C to 85°C case temperature. Pricing starts at $4.89 each for the A-grade version and $1.89 each for the B grade in 1,000-piece quantities. For more information, visit www.linear.com/product/LTC6431-15 [1].

Source URL (retrieved on *07/28/2014 - 9:20am*):
http://www.ecnmag.com/product-releases/2012/09/50ohm-if-gain-block-provides-47dbm-oip3-155db-gain-consumes-only-450mw?qt-recent_content=0

Links:
[1] http://r20.rs6.net/tn.jsp?e=001x7QzGMVQ2N2Ks3EgljRj49hAjLohR_-qjPIU5xYYAXQXuhRBj6qFIkRkjGs9R9L9VijHtDigyyIPiNpLOg4556ZEE1HszqLMh2bVW-mnkTTQZVU6QySswKFsmZwTta-4T30WutOELbo=