



Ultralow Noise & Spurious 350MHz to 6GHz Integer-N PLL/Synthesizer Suppresses System Noise

MILPITAS, CA – December 19, 2011 – Linear Technology announces the [LTC6945](#), a high performance 6GHz integer-N frequency synthesizer with outstanding -226dBc/Hz normalized closed-loop in-band phase noise, excellent -274dBc/Hz normalized in-band 1/f noise, a wideband phase noise floor of -157dBc/Hz and best-in-class -102dBc spurious output. In a typical 900MHz application, these performance attributes enable a closed-loop phase noise of -100dBc/Hz at 1kHz offset. The LTC6945 is designed to work in conjunction with an external low noise VCO up to 6GHz. In addition, the device has an on-chip output divider that is programmable from 1 through 6 to extend the tuning frequency coverage to as low as 350MHz.

The LTC6945 comprises a low noise reference buffer, a reference divider, phase-frequency detector (PFD) with phase-locked indicator, an ultralow noise programmable charge pump and an integer feedback divider to attain very low noise PLL operation. The on-chip SPI-compatible bidirectional serial port allows frequency tuning and control, and read back of the register and loop status information.

The low phase noise and spurious capabilities of the LTC6945 enhance the performance of RF and wireless equipment of all types, including multiband basestations supporting LTE, W-CDMA, UMTS, CDMA, multicarrier GSM and WiMAX standards. Its wide frequency range also supports point-to-point broadband wireless access, military, avionics and high performance test and measurement applications.

The PLLWizard™ comprehensive PC-based design tool software is available to facilitate interactive control and to interface with the LTC6945's evaluation board. Designers can perform simulations and optimization with the PLLWizard software, and then interactively verify their designs on the actual demonstration circuit. The PLLWizard design tool is available for download free of charge at www.linear.com/PLLWizard.

The LTC6945 is specified over the full case temperature range from -40°C to 105°C. The LTC6945 is now available from stock in a 4mm x 5mm, 28-lead plastic QFN package, priced starting at \$4.95 each in 1,000-piece quantities. For more information, visit www.linear.com/product/LTC6945


Photo Caption: Ultralow Phase Noise & Spurious 6GHz Frequency Synthesizer

Summary of Features: LTC6945

- Outstanding In-Band Phase Noise: -226dBc/Hz (Closed-Loop, Normalized)
- Best-In-Class In-Band 1/f Noise: -274dBc/Hz (Closed-Loop, Normalized)
- -157dBc/Hz Wideband Output Phase Noise Floor
- Very Low Spurious Output: -102dBc
- Programmable Charge Pump Up to 11.2mA Output Current
- PLLWizard™ Design Tool Software Support
- On-Chip Output Divider Providing Wide Tuning Frequency Range to as Low as 350MHz

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 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, and μ Module® subsystems.

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