



## **Ultralow Jitter 2MHz to 2700MHz Clock Synthesizer with Distribution Features Multichip Synchronization & JESD204B Clocking**

MILPITAS, CA – March 22, 2016 – Linear Technology Corporation announces the [LTC6951](#), a low phase noise integer-N synthesizer with an integrated VCO and an ultralow jitter clock distribution section, ideal for clocking data converters. The LTC6951 features four high performance current mode logic (CML) outputs, each equipped with an independent low noise clock divider and digital delay block to cover a wide frequency range between 1.95MHz and 2700MHz. With a total of 115fs<sub>RMS</sub> absolute jitter (SNR method), the LTC6951 delivers the low jitter clocks necessary to achieve the best SNR when clocking data converters with high input frequencies and fast output data rates.

The LTC6951 introduces three intelligent schemes to simplify output clock expansion and the creation of large clock trees employed in systems with multiple daughter cards or with a large number of data converters. Linear Technology's proprietary EZSync™ output synchronization method guarantees repeatable and deterministic phase relationships between all clock divider outputs on the LTC6951 and accompanying EZSync supporting devices. The ParallelSync™ multichip parallel synchronization feature allows the outputs of multiple LTC6951 ICs to be retimed to the common reference clock. This permits reference aligned synchronization in the reference clock domain with easy-to-meet nanosecond range setup and hold time requirements. The EZ204Sync™ JESD204B subclass 1 compliant synchronization method builds on the previous two approaches and enables the generation of the SYSREF and DEVCLK signals essential to this JEDEC standard across multiple parallel connected LTC6951 ICs along with any other EZSync compatible clock devices.

Designing with the LTC6951 is simple using the LTC6951Wizard™ simulation and design tool, available for free download at [www.linear.com/LTC6951Wizard](http://www.linear.com/LTC6951Wizard). The LTC6951Wizard software provides appropriate PLL settings and loop filter component values with a click of a button, and accurately predicts the individual output's phase noise and jitter.

Besides performance simulation, the LTC6951Wizard GUI features a scope plot that simulates time domain results of the LTC6951 outputs based on the clock divider, delay and synchronization settings, simplifying the design process and assisting in the circuit debugging phase.

The LTC6951 is specified over the full operating junction temperature range from  $-40^{\circ}\text{C}$  to  $105^{\circ}\text{C}$ . It is available in a space-saving  $5\text{mm} \times 7\text{mm}$ , 40-lead plastic QFN package. The LTC6951 is priced at \$8.75 each in 1,000-piece quantities and is available immediately from stock. Samples and demo boards may be requested by visiting [www.linear.com/product/LTC6951](http://www.linear.com/product/LTC6951) or by contacting your local Linear Technology sales office.

**Photo Caption:** Ultralow Jitter Clock Synthesizer with Integrated VCO Clock Distribution


### Summary of Features: LTC6951

- Low Noise Integer-N PLL with Integrated VCO
- $90\text{fs}_{\text{RMS}}$  Output Jitter (12kHz to 20MHz)
- $115\text{fs}_{\text{RMS}}$  Output Jitter (ADC SNR Method)
- Noise Floor Output Jitter =  $-165\text{dBc/Hz}$  at 250MHz
- EZSync™ Multichip Clock Edge Synchronization
- SYSREF Generation for JESD204B, Subclass 1
- 1.95MHz to 2.5GHz Output Frequency (LTC6951)
- 2.1MHz to 2.7GHz Output Frequency (LTC6951-1)
- $-229\text{dBc/Hz}$  Normalized In-Band Phase Noise Floor
- $-277\text{dBc/Hz}$  Normalized In-Band  $1/f$  Noise
- Five Independent, Low Noise Outputs
- Five Independent Programmable Dividers and Delays
- LTC6951Wizard™ Software Design Tool Support

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## 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,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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