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## **48-Channel PWM Generator with 12-Bit Resolution Dynamically Controls LEDs or Provides 48 DAC Outputs**

MILPITAS, CA – August 1, 2011 – Linear Technology announces the [LT8500](#), a pulse width modulation (PWM) generator with 48 independent channels. Each channel has an individually adjustable 12-bit (4,096 steps) PWM register and a 6-bit (64 step)  $\pm 50\%$  correction register. All controls are programmable via a simple TTL/CMOS 50MHz serial data interface. The LT8500 can be used in a wide variety of PWM-intensive applications such as LED control, as well as industrial and robotic applications. For example, the LT8500 can be used with three LT3595As, 16-channel LED drivers, to deliver 48-independently dimmed LED strings for locally dimmed LED backlighting for large LCD displays. The correction register allows matching light output of each LED string.

The LT8500 operates from a 3V to 5.5V input range, enabling it to operate from a wide range of standard power buses. For LED applications, each channel has individual 6-bit dot correction current adjustment and 12-bit gray scale PWM dimming. The 40ns on-time of the LT8500 offers very wide dynamic contrast ratios. Both correction and gray scale dimming are accessible via a serial interface in TTL/CMOS logic. The LT8500 offers two diagnostic information flags: synchronization error and open LED. The flags are sent with additional state information, on the serial data interface during status read back. The 50MHz cascadable serial data interface includes buffering and skew-balancing, easing the design for PWM-intensive applications such as large screen LCD dynamic backlighting. The combination of minimal externals and a 5mm x 9mm QFN package provide a highly compact solution footprint for multichannel PWM applications.

The LT8500EUHH is available in a 56-lead 5mm x 9mm QFN package, priced starting at \$2.95 each, in 1,000-piece quantities. The extended temperature version, the LT8500IUHH, or I-grade, is also available, priced starting at \$3.25 each in 1,000-piece quantities. All versions are available from stock. For more information, visit [www.linear.com/product/LT8500](http://www.linear.com/product/LT8500)


**Photo Caption:** 48-Channel PWM Generator with 12-Bit Resolution and 50MHz Serial Interface

### Summary of Features: LT8500

- 3V to 5.5V Input Voltage
- 48 Independent PWM Outputs
- TTL/CMOS Logic 50MHz Serial Data Interface
- 12-Bit (4096 Steps) PWM Width Resolution
- 6-Bit (64 Steps) PWM Correction ( $\pm 50\%$  of Programmed PWM Width)
- Up to 6.1kHz PWM Frequency (PWMCK = 25MHz)
- Phase-Shift Option Reduces Switching Noise
- Directly Controls Three LT3595A 16-Channel LED Drivers
- Diagnostic Information: Sync Error/Open LED Flags
- 56-Pin (5mm x 9mm x 0.75mm) QFN Package

### 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  $\mu$ Module<sup>®</sup> subsystems.

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