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TimerBlox Family of SOT23 Devices Enables Simple Timing Solutions

MILPITAS, CA – August 9, 2010 – Linear Technology announces the **TimerBlox™** family, a set of simple, small, accurate and low power devices for five commonly used timing functions: voltage-controlled oscillator, low frequency oscillator, pulse width modulated oscillator, monostable pulse generator (one-shot) and delay. As a family, the TimerBlox parts provide a precision, easy-to-use solution; these parts offer a single common platform and allow the use of precise building block solutions for each function.

Leveraging Linear Technology's advanced silicon oscillator technology, TimerBlox parts combine an accurate, programmable oscillator with precision circuitry and logic. Like all Linear Technology silicon oscillators, TimerBlox devices are solid state and can be operated under high acceleration, vibration and temperature extremes. TimerBlox products ensure accuracy and stability at a much higher level than typical resistor/capacitor-based oscillators. Each TimerBlox part can operate over a wide frequency or time range, and is programmed with 1 to 3 resistors. The micropower operation provides an alternative to resistor/capacitor-based timers that often require milliwatts of power.

The 20mA source and sink capability directly drives opto-isolators and transformers for electrical isolation. Fully specified over the temperature range of -40°C to 125°C, the TimerBlox parts are suitable for demanding automotive and industrial environments, where many oscillators and microcontrollers are unable to operate. The small SOT23 footprint allows each timing device to be placed at the point of use, without routing signals over long distances, and provides an ideal timer for space-limited applications such as handheld and portable devices.

"TimerBlox devices ease the design and time constraints facing today's engineers," says Erik Soule, General Manager for Linear Technology. "They eliminate the complexity of software programming and circuit design, while providing good accuracy, low power and a small footprint."

Application examples and design ideas have been compiled in the TimerBlox Circuit Collection, available online at www.linear.com/TimerBlox. Incorporating TimerBlox parts into larger

systems is simplified with a complete set of TimerBlox LTspice® models. The LTspice design tool is a high performance Spice III simulator, schematic capture and waveform viewer, available for download from Linear Technology. In addition, the TimerBlox can be quickly set up using the TimerBlox Designer, an Excel-based set-up tool that generates a schematic, with part name and resistor values, and a timing diagram based on the timing function parameters. Finally, a complete line of TimerBlox demo boards are available for purchase from Linear Technology.

The first available device in the TimerBlox series, the LTC6990 Voltage Controlled Oscillator (VCO) provides accurate and simple voltage-controlled output frequencies from 488Hz to 2MHz. Using only a few resistors, the designer can set the center frequency and modulate the output with an external voltage. A narrow or wide VCO tuning range can be customized for the application, and the high modulation bandwidth allows the part to adapt to a wide range of applications. For example, the LTC6990's voltage-to-frequency capability can interface to temperature, light and other environmental sensors, and the output can drive isolators, piezo and ultrasonic devices. Baseline frequency error is only 1.5% maximum and the enable function ensures clean, glitch-free output pulses.

The LTC6990 is now available, priced starting at \$1.55 each in 1,000-piece quantities. Other TimerBlox devices will be introduced over the next month. For more information, visit www.linear.com/TimerBlox.

Photo Caption: TimerBlox™ Family: Simple, Accurate & Small Timing Solutions

Summary of Features: TimerBlox Family


- TimerBlox Family - Five Timing Functions:
 - Voltage Controlled Oscillator (LTC6990)
 - Resettable Low Frequency Oscillator
 - Voltage Controlled Pulse Width Modulator (PWM)
 - Monostable Pulse Generator (One-Shot)
 - Delay Block / Debouncer
- Frequency Programmable Internal Oscillator
 - No Crystal
 - No Timing Caps
 - Programmable for 9.5hr Period, up to 2MHz
- 2.25V to 5.5V Single Supply Operation
- Output Sources/Sinks $\pm 20\text{mA}$
- Simple, Programmed with only 3 Resistors
- 500usec Start-up Time
- 60uA to 250uA Supply Current
- -40°C to 125°C Operating Temperature Range
- Low Profile (1mm) ThinSOT™ Package or 2mm x 3mm DFN

Summary of Features: LTC6990

- Voltage Controlled Oscillator for 488Hz to 2MHz
- Simple 2 Resistor Set-up
 - Set Center Frequency
 - Set Wide or Narrow Tuning Range
- 2.25V to 5.5V Single Supply Operation
- 72µA Supply Current at 100kHz
- 500µs Start-up Time
- VCO Bandwidth >300kHz at 1MHz
- Square Wave Output with 50% Duty Cycle
- Output Enable with Selectable Hi-Z or Low Output when Disabled

About Linear Technology

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, uModule[®] products, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems.

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Press Contacts:

North America / Worldwide

John Hamburger, Director Marketing
Communications
jhamburger@linear.com
Tel 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
408-432-1900 ext 2233

UK & Nordic

Alan Timmins
alan@ezwire.com
Tel: +44-1-252-629937