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400kHz Rise Time Accelerator Improves Heavily Loaded I²C/SMBus System Reliability

MILPITAS, CA – January 31, 2008 – Linear Technology introduces the LTC4311 Rise Time Accelerator for heavily loaded I²C/SMBus systems operating at bus speeds of up to 400kHz. The LTC4311 offers improvements over existing accelerator products with its wide supply voltage range, low power shutdown mode, strong pull-up current, tight bus hold-off threshold, voltage improved ESD ruggedness and reduced package size.

Systems where multiple devices are connected to the same bus can exhibit high bus capacitance well beyond the 400pF I²C specification. The capacitive loading causes slow rise times that can affect data reliability and dictate the maximum practical speed of the bus. The LTC4311 alleviates these issues by using a boosted pull-up current during the rising bus transitions, while disabling the current sources during falling transitions and during logic lows and logic highs for improved low state noise margins. The LTC4311 is ideal for portable applications, including cameras, notebook computers and full-featured cell phones.

The LTC4311 is capable of operating from supply voltages as low as 1.6V and as high as 5.5V. It provides an ENABLE pin for a low current shutdown of less than 5uA, with no bus loading during shutdown or when powered down. The LTC4311 auto-detects the bus idle state and reduces supply current to only 26uA in standby mode. For additional reliability, the LTC4311 survives ±8kV Human Body Model ESD on its pins.

Specified over the commercial and industrial temperature ranges, the LTC4311 is offered in tiny 2mm x 2mm 6-pin DFN and SC70 packages. Available today, pricing begins at \$1.55 in 1,000 piece quantities.


Photo Caption: Rise Time Accelerator for I²C/SMBus Systems

Summary of Features: LTC4311

- Improves I²C/SMBus Rise Time Transition
- Ensures Data Integrity with Multiple Devices on the I²C/SMBus
- Low Voltage Operation: 1.6V to 5.5V
- Improves Low State Noise Margin
- Up to 400KHz Operation
- Auto Detect Low Power Standby Mode
- Low (<5uA) Supply Current Shutdown
- Does Not Load Bus When Shutdown or Powered Down
- Strong Slew Limited Pull-Up Current (5mA)
- Tighter Bus Hold-off Threshold Voltage
- +/- 8kV Human Body ESD Ruggedness
- 2mm x 2mm DFN & SC70 Packages

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. For more information, visit www.linear.com.

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