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2-Wire Bus Buffer Provides Bi-Directional Capacitance Isolation for HDMI Device Compliance

MILPITAS, CA – July 24, 2007 – Linear Technology introduces the LTC4307-1, an HDMI (High-Definition Multimedia Interface) compliant bidirectional bus buffer that provides capacitance buffering and level shifting between HDMI source and sink devices. The HDMI standard requires that devices have less than 50pF of input capacitance on their display data channel (DDC), a 2-wire bus that passes digital data from the sink device (such as a digital TV) to the high definition video source device. LTC4307-1 offers sub-10pF data and clock input capacitance along with a capacitance buffering feature, allowing devices to pass the HDMI DDC input capacitance compliance test with ease.

The LTC4307-1 bidirectional capacitance buffering isolates the internal bus capacitance that may be larger than 50pF, while presenting sub-10pF to the HDMI cable. Level translation is incorporated into the part to allow 3.3V HDMI devices to interface safely to the 5V HDMI DDC bus. The LTC4307-1 provides undervoltage lockout protection, and further avoids corruption of data by monitoring both its input and output bus for completion of data transactions before connecting to the bus. A READY output pin provides a digital flag to indicate the busses are connected and ready to communicate, and can be used to control the HDMI Hot Plug Detect (HPD) signal. The LTC4307-1 adds only 60mV of logic low offset, allowing several to be cascaded in series without exceeding V_{OL} limits.

The LTC4307-1 is offered in small 8-pin (3mm x 3mm) DFN or 8-lead MSOP packages, with +/-5kV Human Body Model ESD Protection. Pricing begins at \$2.15 in 1,000 piece quantities.


Photo Caption: Pass HDMI Compliance Tests with Ease

Summary of Features: LTC4307-1

- Bidirectional Buffer for Display Data Channel (DDC)
- Compliant with HDMI Specification Version 1.3 DDC Capacitance Requirement
- Level Translation Between 3.3V and 5V
- $\pm 5\text{kV}$ Human Body Model ESD Protection
- 60mV Buffer Offset Independent of Load
- Compatible with Non-Compliant V_{OL} I²C Devices
- Compatible with I²C, I²C Fast Mode and SMBus
- READY Open-Drain Output
- Small 8-Pin (3mm x 3mm) DFN and 8-Lead MSOP 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, 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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