



Robust 3.3V/5V RS232/RS485 Multiprotocol Transceivers Provide Integrated Switchable Termination

MILPITAS, CA – December 08, 2010 – Linear Technology Corporation introduces the [LTC2870](#) and [LTC2871](#) multiprotocol transceivers with switchable integrated termination for 3.3V and 5V systems. RS485 systems require a termination resistor on the ends of the communication bus to minimize signal reflections. Both the LTC2870 and LTC2871 integrate pin-controlled termination resistors that allow for easy interface reconfiguration, eliminating external resistors and control relays. The termination resistors, when enabled, are automatically switched on or out to match the transceiver's protocol selection of RS232 or RS485. Both devices also feature high ESD protection: $\pm 26\text{kV}$ HBM (LTC2870) or $\pm 16\text{kV}$ HBM (LTC2871) on the transceiver bus pins, when powered off or operating. The LTC2870 can be configured as two RS232 single-ended transceivers or one RS485 differential transceiver on shared I/O lines, whereas the LTC2871 offers independent control of two RS232 transceivers and one RS485 transceiver, each on dedicated I/O lines. Both devices reduce component count for multiprotocol networks and offer on-the-fly configurability.

The LTC2870 and LTC2871 are suitable for a wide variety of applications, including software-selectable multiprotocol interface ports, point-of-sale terminals, security cameras, cable repeaters and protocol translators. An optional 1.7V to 5.5V logic supply enables convenient digital interfacing, and an integrated DC/DC boost converter eliminates the need for multiple supplies to drive RS232 levels. Drivers and receivers can be independently disabled, leaving

them in a high impedance state, consuming only 9uA in a low power shutdown mode. Aside from automatic termination selection, both devices provide half- and full-duplex RS485 switching and a logic loopback mode that steers the driver inputs to the receiver outputs for diagnostic self-test and debug. Other protective measures include high ESD of $\pm 4\text{kV}$ or better on all pins, thermal shutdown protection and a full failsafe RS485 receiver for floating, shorted or terminated inputs that eliminates the need for external network biasing resistors and UART lockup.

The LTC2870 is available in 28-pin 4mm x 5mm QFN and TSSOP packages, and the LTC2871 is available in 38-pin 5mm x 7mm QFN and TSSOP packages. Both devices are available today in production quantities, priced starting at \$5.00 each in 1,000 piece quantities. Please visit www.linear.com/2870 for more product selection and information.


Photo Caption: Simultaneous Protocols and RS485 Termination Switching

Summary of Features: LTC2870/71

- 3V to 5.5V Supply Voltage Range
- One RS485 & Two RS232 Transceivers
- 20Mbps RS485 & 500kbps RS232
- Automatic Selection of Integrated RS485 (120Ohm) & RS232 (5kOhm) Termination Resistors
- Logic Loopback Mode
- High ESD: $\pm 26\text{kV}$ (LTC2870) or $\pm 16\text{kV}$ (LTC2871) on Line I/O; $\pm 4\text{kV}$ on All Other Pins
- 1.7V to 5.5V Logic Interface
- Supports up to 256 RS485 Nodes
- Full Failsafe RS485 Receiver Eliminates UART Lockup
- Available in 28-Pin 4mm x 5mm QFN & TSSOP (LTC2870), & 38-Pin 5mm x 7mm QFN & TSSOP (LTC2871)

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 μ Module[®] subsystems.

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