



Isolated 12-Port Power over Ethernet PSE Controller Chipset Eliminates Optos for Lowest Solution Cost

MILPITAS, CA – May 2, 2011 – Linear Technology Corporation introduces the [LTC4270/LTC4271](#) isolated 12-port Power Source Equipment (PSE) controller chipset designed for use in IEEE 802.3at (PoE+) Type 1 and Type 2 compliant Power over Ethernet (PoE) systems. The LTC4270/71 provides 12 independent PSE channels for simpler, lower component count designs, reduced board space and lower solution costs. The LTC4271 provides a digital interface to the PSE host, while the LTC4270 provides the high voltage Ethernet interface; the two ICs are then bridged by inexpensive Ethernet transformers. The transformer-isolated communication protocol replaces up to six expensive opto-couplers and a complex isolated 3.3V supply used in traditional designs, resulting in significant cost savings and a more robust and manufacturable design.

The LTC4270/LTC4271 is suitable for a wide variety of PSE applications, including next generation switches, routers, hubs and midspans. Users will appreciate the robustness provided by 80V port pins and lowest-in-industry power dissipation, making thermal design significantly easier than designing with PSEs that integrate more fragile normally higher $R_{DS(ON)}$ MOSFETs. Powered Device (PD) discovery is accomplished using a proprietary dual-mode, four point detection mechanism that ensures the best immunity from false PD detection. Advanced power management includes prioritized fast shutdown, 14-bit per-port voltage and current readback, 8-bit programmable current limits and 7-bit programmable overload current limits and field-upgradeable firmware. A 1MHz I²C interface allows a host controller to digitally configure the IC or query port readings. “C” libraries are available to reduce engineering costs and improve time to market.

The LTC4270 is available in three power grades: A-grade uses Linear’s LTPoE++™ signaling to support up to 90W PDs, B-Grade uses PoE+ signaling to support up to 25.5W PDs, and C-grade uses PoE signaling to support up to 13W PDs. All chipsets are offered in industrial

temperature grades. The LTC4270 is in a RoHS-compliant 52-pin 7mm x 8mm QFN package, while the LTC4271 is in a 24-pin 4mm x 4mm QFN package. The LTC4270/71 chipset is priced starting at \$12.00 each in 1,000 piece quantities and is now available in production quantities. The LTC4270/LTC4271 is backward compatible with the LTC4266 4-port PoE+ PSE controller and LTC4274 single-port PoE+ PSE controller, supported by Linear's extensive technical experience in PoE circuit design, ensuring a smooth transition to the new PoE+ standard or higher power levels. Please visit www.linear.com/product/LTC4270 for more product information.


Photo Caption: Transformer-Isolated 12-Port PSE Controllers Reduce Cost

Summary of Features: LTC4270/LTC4271

- 12 Independent PSE Channels
- Compliant with IEEE 802.3at Type 1 and 2
- Chipset Provides Electrical Isolation
 - Reduce BOM Cost
 - Eliminates up to 6 High Speed Opto-Couplers
 - Eliminates Isolated 3.3V Power Supply
- Low Power Dissipation
 - 0.25Ohm Sense Resistance Per Channel
- Very High Reliability 4-Point PD Detection
 - 2-Point Forced Voltage
 - 2-Point Forced Current
- Temperature Monitoring
- VEE & VPORT Monitoring
- 1 Second Rolling IPORT Averaging
- 1MHz I²C Compatible Serial Control Interface
- Available In Three Power Grades
 - A-Grade – LTPoE++ 35W to 90W
 - B-Grade – PoE+ 25.5W
 - C-Grade – PoE 13W
- Available in 52-Lead 7mm x 8mm (LTC4270) & 24-Lead 4mm x 4mm (LTC4271) QFN Packages

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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