



## **Isolated 8-Port PoE PSE Controllers Eliminate Optos for Lowest Solution Cost**

MILPITAS, CA – April 29, 2013 – Linear Technology Corporation introduces the [LTC4290/LTC4271](#) isolated 8-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 LTC4290/4271 provides 8 independent PSE channels for simpler lower component count designs, reduced board space and ultimately reduced total solution costs. The LTC4271 provides a digital interface to the PSE host, whereas the LTC4290 provides the high voltage Ethernet interface; the two ICs are then bridged by an inexpensive Ethernet transformer. 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 easy to manufacture design.

The LTC4290/LTC4271 chipset earns a 100% interoperability score for PoE+ and PoE systems in popular compliance tests. When paired with the LT4275 PD (powered device) controller, complete end-to-end LTPoE++ systems can deliver up to 90W while remaining fully compatible with PoE+ and PoE.

Users will appreciate the robustness provided by 80V port pins and lowest-in-industry power dissipation, making thermal design significantly easier than when designing with PSEs integrating more fragile normally-higher- $R_{DS(ON)}$  MOSFETs. PD discovery is accomplished using a proprietary dual-mode, four-point detection mechanism that ensures optimum immunity from false PD detection. Advanced power management includes prioritized fast shutdown,

12-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 I<sup>2</sup>C interface allows a host controller to digitally configure the IC or query port readings. “C” libraries are available to reduce NRE and improve time to market.

The LTC4290 is offered in three power grades: A grade uses Linear Technology’s LTPoE++™ signaling to support 38.7W, 52.7W, 70W and 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 ranges. The LTC4290 is in a RoHS-compliant 40-pin 6mm x 6mm QFN package, while the LTC4271 is in a 24-pin 4mm x 4mm QFN package. The LTC4290/71 chipset is priced starting at \$10.00 each in 1,000 piece quantities and is now available in production quantities. The LTC4290/LTC4271 is Linear Technology’s first 8-port PSE controller and complements the LTC4274 single port, LTC4266 4-port and LTC4270/71 12-port PSE controllers. For more information, visit [www.linear.com/LTPoE++](http://www.linear.com/LTPoE++).

**Photo Caption:** Transformer-Isolated 8-Port PSE Controllers Reduce Cost


### **Summary of Features: LTC4290/LTC4271**

- Eight Independent PSE Channels
- Compliant with IEEE 802.3at Type 1 & 2
- Chipset Provides Electrical Isolation
  - Reduced 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
- V<sub>EE</sub> & V<sub>PORT</sub> Monitoring
- 1 Second Rolling I<sub>PORT</sub> Averaging
- Supports 2-Pair & 4-Pair Output Power

- 1MHz I<sup>2</sup>C Compatible Serial Control Interface
- Available In Three Power Grades
  - A Grade – LTPoE++ 38.7W to 90W
  - B Grade – PoE+ 25.5W
  - C Grade – PoE 13W
- 40-Lead 6mm x 6mm (LTC4290) & 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,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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