



Dual Output DC/DC Controller with Digital Interface Operates with 0.25 Milliohm Sense Resistance

MILPITAS, CA – August 14, 2014 – Linear Technology Corporation announces the [LTC3882](#), a dual output multiphase synchronous step-down DC/DC controller with a serial digital interface. The LTC3882 uses leading-edge modulation voltage-mode control for excellent transient response and operates with very low DCR (0.25 milliohm) inductors, enabling higher efficiency and up to 40A per output phase. Compatible power train devices include DrMOS, power blocks or discrete FET drivers and associated N-channel MOSFETs.

The digital interface enables system designers and remote operators to command and supervise a system's power condition and consumption. The capability to digitally change power supply parameters reduces time-to-market and down time, eliminating what would typically require physical hardware, circuit, or system bill-of-material modifications. The LTC3882 simplifies system characterization, optimization and data mining during prototyping, deployment and field operation. Applications include optical transport systems, datacom and telecom switches and routers, industrial test equipment, robotics, RAID and enterprise systems, where the cost of electrical utilities, cooling and maintenance are critical.

In addition to delivering power to a point-of-load, the LTC3882 features configurability and telemetry-monitoring of power and power management parameters over PMBus — an open standard I²C-based digital serial interface protocol. The LTC3882's 2-wire serial interface enables outputs to be margined, tuned and ramped up and down at programmable slew rates with sequenced delay times. Input and output voltages and output currents, output power, temperature

and peak values are readable. The device is comprised of fast, dual analog control loops, precision mixed-signal circuitry, EEPROM and is housed in a 6mm x 6mm QFN-40 package.

To evaluate the performance of the LTC3882, the LTpowerPlay™ GUI (graphic user interface) is free for download. USB-to-PMBus converter and demo kits are also available. With +/-0.5% maximum DC output error over temperature, +/-1% current read back accuracy, integrated 16-bit Delta Sigma ADC and EEPROM, the LTC3882 combines best-in-class analog switching regulator performance with precision mixed signal data acquisition. It operates from an IC power supply between 3V and 13.2V and is intended for conversion from V_{IN} between 3V and 38V to output voltages between 0.5V and 5.25V. Channels can accurately share current in both steady state and transient conditions. Up to four LTC3882s can operate in parallel for 2-, 3-, 4-, 6- or 8-phase operation. At start-up, output voltages, switching frequency and channel phase angle assignments can be set by pin-strapping resistors or loaded from internal EEPROM. The LTC3882 internal operating temperature range is from -40°C to 125°C. 1,000-piece price is \$5.35 each. For more information, visit www.linear.com/product/LTC3882

Photo Caption: Dual Synchronous Step-Down Controller with Digital Interface

Summary of Features: LTC3882


- Dual Synchronous Voltage Mode Step-down Controller
- Fast Analog Control Loops
- Digital Interface for Remote Power System Management
- Input Voltage Range: 3V to 38V
- Output Voltage Range: 0.5V to 5.25V
- +/-1% Current Read Back Accuracy
- +/-0.5% Maximum DC Output Voltage Error Over Temperature
- 6mm X 6mm QFN-40 Package, Includes Data Acquisition & EEPROM
- Readable Data:
- Input & Output Voltages, Output Currents, Output Power & Temperature
- Faults & Warnings
- Fault Log Record Report

- Writable Data:
- Output Voltage, Voltage Sequencing & Margining
- Digital Soft-Start/Stop Ramp
- Switching Frequency & Phasing
- PWM Control Configuration
- Input/Output Overvoltage & Undervoltage
- Output Current Limit
- Overtemperature, Warning & Fault Limits

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

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 over 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, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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Press Contacts:

North America / Worldwide

John Hamburger, Director Marketing
Communications
jhamburger@linear.com
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
Tel: 408-432-1900 ext 2233

UK & Nordic

Alan Timmins
alan@ezwire.com
Tel: +44-1-252-629937