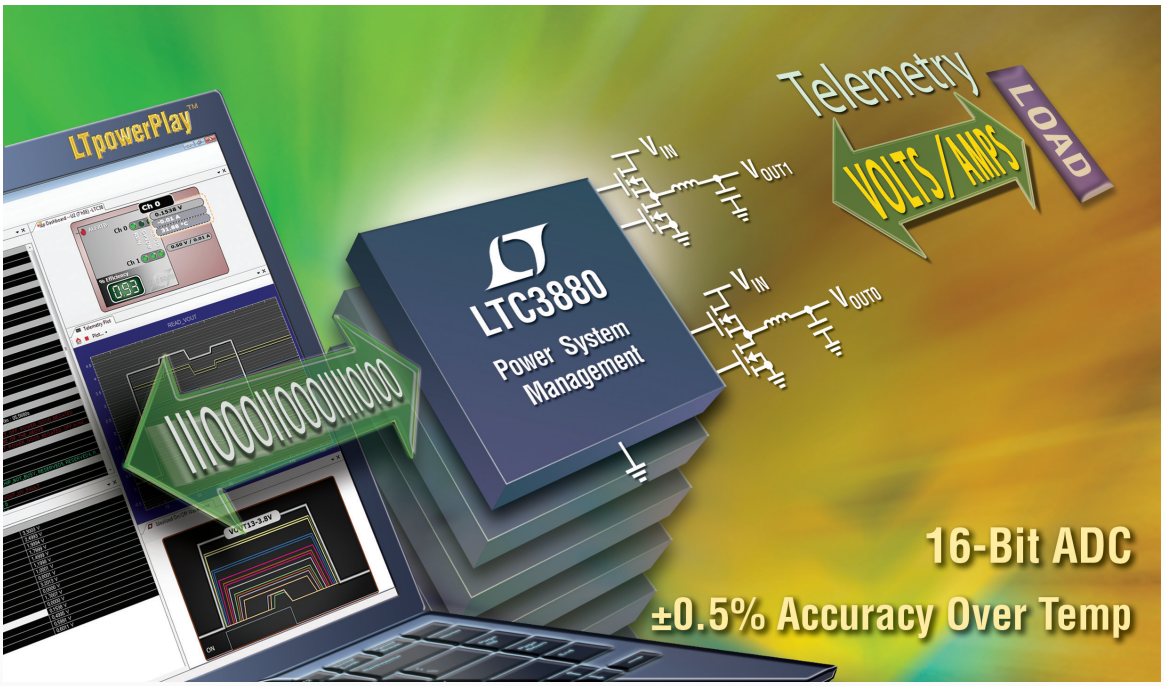
Power System Management



High Performance Plus Programmability

The LTC®3880 is a power system manager featuring a dual output synchronous step-down DC/DC controller with digital telemetry and is fully programmable via an I²C-based PMBus compliant serial interface. This device combines an onboard EEPROM, best in class analog switching regulator performance with precision mixed signal data conversion for ease of power system design. Power system management devices can remotely monitor the real-time performance of a voltage regulator and report back its health and power consumption, enabling smart energy management decisions.

Features

Interface

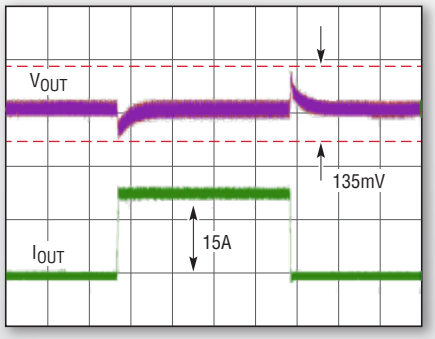
- I²C/PMBus Compliant Serial Interface
- Internal EEPROM
- High Accuracy Programming for V_{OUT}, I_{LIM}, Sequencing, Margining, OV/UV Levels and Switching Frequency
- High Resolution Telemetry Read Back Includes V_{IN}, I_{IN}, V_{OUT}, I_{OUT}, Duty Cycle, Temperature and Fault Status/Logging
- Integrated 16-Bit ADC

Power Conversion

- Dual Output Synchronous DC/DC Controller
- V_{IN} Range: 4.5V to 24V
- V_{OUT} Range: 0.5V to 5.5V
- I_{OUT}: Up to 30A/Phase
- Powerful Onboard Gate Drivers
- Fast Analog Control Loop
- Differential Amplifier for Remote V_{OUT} Sensing
- Accurate PolyPhase® Current Sharing for Up to 6 Phases
- ±0.5% Output Voltage Tolerance
- Selectable Continuous, Discontinuous or Burst Mode® Operation

Analog Control Loop for Best Performance

The LTC3880/LTC®3880-1 has an analog control feedback loop which is more stable, has a faster transient response and requires less output capacitance than a digital control feedback loop in most applications.

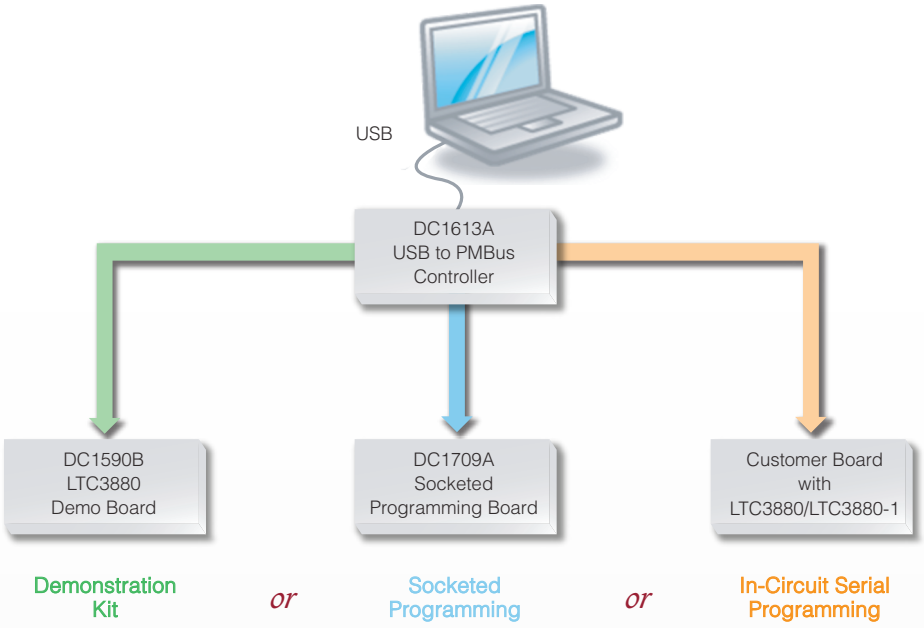


200µs/DIV

$12V_{IN}$, $1.2V_{OUT}$, di/dt = 100A/µs, f_{SW} ≈ 400kHz
OUTPUT CAP: 2× 330µF POSCAP, 2× 100µF CERAMIC

LINEAR TECHNOLOGY

Complete Development Platform with LTpowerPlay™ Software



Digital control over analog power supplies with a simple PC connection is extremely valuable during the development stage, when system designers need to get their systems up and running quickly. Our development platform provides designers of multiple voltage rail systems an easy way to make real-time adjustments of supply voltages, sequencing, operating voltage limits, and read parameters like voltage, current and temperature. The LTC3880's integrated 16-bit ADC enables high accuracy programming and telemetry read back. The host computer can be immediately notified when a fault occurs via the PMBus alert line and dependent rails can be shut down to protect powered devices. The LTC3880 is supported by the LTpowerPlay software development tool with a graphical user interface (GUI).

LTpowerPlay GUI Software—Free Download at www.linear.com/LTpowerPlay