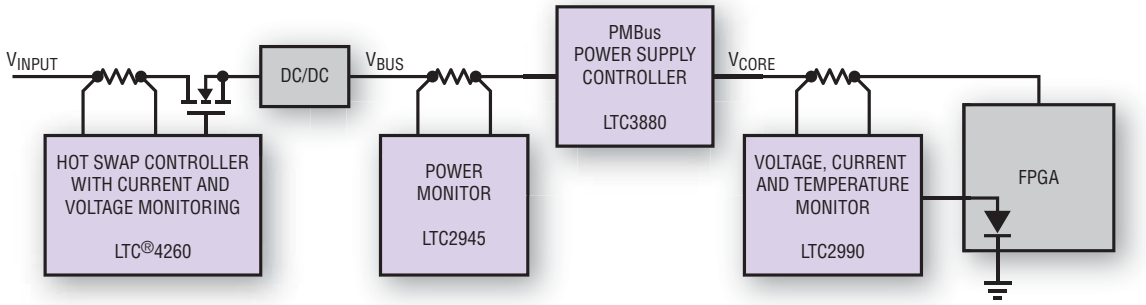
Power and Thermal Monitoring



Linear Technology Every Trace of the Way

"Knowledge is power," which is especially true at the board level of many electronic applications. Knowledge of key system parameters provides valuable feedback and allows users to monitor the health of a system and make intelligent decisions. From input voltage to the temperature of an FPGA, these key metrics help determine whether a system is operating correctly, efficiently or even dangerously. We offer various types of monitoring ICs—from Hot Swap™ controllers with built-in monitoring capabilities to dedicated power and temperature monitors.

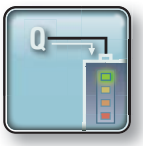
Key System Parameters

Current: Our current monitoring ICs implement a high side differential current sensing scheme to avoid the pitfalls of low side sensing by using special amplifiers and ADCs, providing users with inrush and operational current insight, improved diagnostic capabilities and maintenance of ground path integrity.

Voltage: Our voltage monitoring ICs provide single-ended or differential measurements with up to 0.04% accuracy of voltages ranging from –100V to 80V, allowing users to monitor virtually any input, bus or core voltage in a system and take proactive or reactive measures against drifting or failing rails.

Power: Our power monitoring ICs integrate an accurate multiplier to alleviate the host of multiplying current and voltage data, and provide users with average or instantaneous power readings. Features like an analog or digital interface, high voltage capabilities, and up to 1.5% accuracy simplify part selection.

Temperature: Our temperature monitoring ICs provide up to ±0.25°C accurate digital or analog readings of internal (die) or external (diode) temperature, allowing users to easily and cost-effectively implement board or component temperature sensing schemes for system health assessment or application-specific purposes.



Coulombs: Our coulomb counting ICs provide 1% accurate charge readings, with optional readings of temperature and voltage, so users are equipped with the fundamental parameters required to implement custom battery profiles and accurately assess the most treasured parameter in battery gas gauging applications – state of charge (SoC).

LINEAR TECHNOLOGY

Power and Thermal Monitoring

Device Type	Part Number	Monitored Parameters					Supply Range	Interface	Description
		Voltage	Current	Temp	Power	Coulombs			
Hot Swap Controllers	LTC4215	•	•				2.9V to 15V	I²C	Single Hot Swap Controller with 8-Bit Monitoring
	LTC4218		•				2.9V to 26.5V	Current	Single Hot Swap Controller
	LTC4222	•	•				2.9V to 29V	I²C	Dual Hot Swap Controller with 10-Bit Monitoring
	LTC4260	•	•				8.5V to 80V	I²C	Single Hot Swap Controller with 8-Bit Monitoring
	LTC4261	•	•				–12V to –100V	I²C	Single Hot Swap Controller with 10-Bit Monitoring
	LTC4280	•	•				2.9V to 15V	I²C	Single Hot Swap Controller with 8-Bit Monitoring
Power Monitors	LTC2945	•	•		•		0V to 80V	I²C	High Voltage Rail-to-Rail Current and Power Monitor
	LTC4151	•	•				7V to 80V	I²C	High Voltage Current and Voltage Monitor
	LT2940		•		•		4V to 80V	Current	500kHz Power and Current Monitor
Temperature Monitors	LTC2990	•	•	•			3V to 5.5V	I²C	Quad Voltage, Current and Temperature Monitor
	LTC2991	•	•	•			3V to 5.5V	I²C	Octal Voltage, Current and Temperature Monitor
	LTC2995	•		•			2.25V to 5.5V	Voltage	Temperature Sensor and Dual Voltage Monitor
	LTC2996			•			2.25V to 5.5V	Voltage	Temperature Sensor with Alerts
	LTC2997			•			2.5V to 5.5V	Voltage	Temperature Sensor
Power Supply Managers	LTC2970	•	•	•			4.5V to 15V	I²C	Dual Power Supply Manager
	LTC2974	•	•	•			3.13V to 15V	I²C/PMBus	Quad PMBus Power Supply Manager with EEPROM
	LTC2977	•	•	•			3.13V to 15V	I²C/PMBus	Octal PMBus Power Supply Manager with EEPROM
Power Supply Controllers	LTC3880	•	•	•			4.5V to 24V	I²C/PMBus	Dual PMBus DC/DC Controller with EEPROM
	LTC3883	•	•	•			4.5V to 24V	I²C/PMBus	Single PMBus DC/DC Controller with EEPROM
Battery Gas Gauges	LTC2941					•	2.7V to 5.5V	I²C	Battery Gas Gauge
	LTC2942	•		•		•	2.7V to 5.5V	I²C	Battery Gas Gauge with Temperature & Voltage Measurement
	LTC2943	•	•	•		•	3.6V to 20V	I²C	Multicell Battery Gas Gauge
	LTC4150					•	2.7V to 8.5V	Logic	Battery Gas Gauge
Battery Stack Monitors	LTC6801	•		•			10V to 50V	Logic	Multicell Battery Stack Fault Monitor
	LTC6802	•		•			4V to 50V	SPI	Multicell Battery Stack Monitor with 0.25% Accuracy
	LTC6803	•		•			4V to 55V	SPI	Multicell Battery Stack Monitor with 0.25% Accuracy
	LTC6804	•		•			11V to 55V	SPI/isoSPI™	Multicell Battery Stack Monitor with 0.067% Accuracy