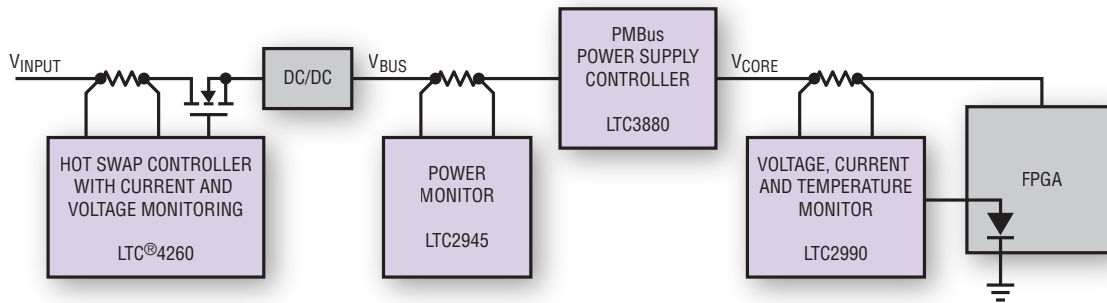


Power and Thermal Monitoring



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 $\pm 0.25^\circ\text{C}$ 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).



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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	I ² C	Single Hot Swap Controller with 8-Bit Monitoring	
	LTC4218		•				2.9V to 26.5V	Current	Single Hot Swap Controller	
	LTC4222	•	•				2.9V to 29V	I ² C	Dual Hot Swap Controller with 10-Bit Monitoring	
	LTC4260	•	•				8.5V to 80V	I ² C	Single Hot Swap Controller with 8-Bit Monitoring	
	LTC4261	•	•				-12V to -100V	I ² C	Single Hot Swap Controller with 10-Bit Monitoring	
	LTC4280	•	•				2.9V to 15V	I ² C	Single Hot Swap Controller with 8-Bit Monitoring	
Power Monitors	LTC2945	•	•		•		0V to 80V	I ² C	High Voltage Rail-to-Rail Current and Power Monitor	
	LTC4151	•	•				7V to 80V	I ² C	High Voltage Current and Voltage Monitor	
	LTC2940		•		•		4V to 80V	Current	500kHz Power and Current Monitor	
Temperature Monitors	LTC2990	•	•	•			3V to 5.5V	I ² C	Quad Voltage, Current and Temperature Monitor	
	LTC2991	•	•	•			3V to 5.5V	I ² C	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	
	LTC2970	•	•	•			4.5V to 15V	I ² C	Dual Power Supply Manager	
Power Supply Managers	LTC2974	•	•	•			3.13V to 15V	I ² C/PMBus	Quad PMBus Power Supply Manager with EEPROM	
	LTC2977	•	•	•			3.13V to 15V	I ² C/PMBus	Octal PMBus Power Supply Manager with EEPROM	
	LTC3880	•	•	•			4.5V to 24V	I ² C/PMBus	Dual PMBus DC/DC Controller with EEPROM	
Power Supply Controllers	LTC3883	•	•	•			4.5V to 24V	I ² C/PMBus	Single PMBus DC/DC Controller with EEPROM	
	LTC2941					•	2.7V to 5.5V	I ² C	Battery Gas Gauge	
	LTC2942	•		•		•	2.7V to 5.5V	I ² C	Battery Gas Gauge with Temperature & Voltage Measurement	
Battery Gas Gauges	LTC4150					•	2.7V to 8.5V	Logic	Battery Gas Gauge	
	LTC6801	•		•			10V to 50V	Logic	Multicell Battery Stack Fault Monitor	
Battery Stack Monitors	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	