The CS5461A enables digital power-meter manufacturers to provide highly accurate, cost-effective solutions for measuring power usage. This new IC is an integrated power-measurement device that combines two Delta-Sigma A/D converters, high-speed power calculation functions, and a serial interface on a single chip. Additional features include AC and DC calibration and phase compensation. Designed for residential single-phase or industrial three-phase power-meter applications, the IC accurately measures instantaneous current and voltage while calculating instantaneous power, real power, apparent power, $I_{\text{RMS}}$ and $V_{\text{RMS}}$.

The CS5461A is easy to design in as a pin-compatible upgrade to the popular Cirrus Logic CS5460A. It retains all the functionality of its predecessor, while also providing an on-chip temperature sensor which can be used to lower the temperature coefficient, allowing for higher accuracy over temperature. For communication with a microcontroller, the IC features a bi-directional serial interface, which is initialized and fully functional upon reset. The CS5461A can interface to a low-cost shunt resistor or transformer for current measurement and to a resistive divider or potential transformer for voltage measurement. The CS5461A delivers accurate power usage measurements and is ideal for electronic power-meter applications.