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THE INFORMATION CENTER FOR THE ELECTRONICS DESIGNER

FEATURED INSIDE:

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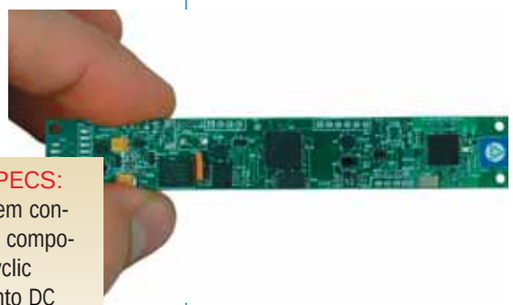
Leading Off

Energy Harvesting Wireless Strain Sensing Modules

MicroStrain announced its energy harvesting wireless strain sensing modules, called ESG-LINK. The company asserts its sensing systems will operate indefinitely — without the need for batteries — by converting the component's cyclic strains into DC power using piezoelectric materials. The miniaturized energy harvesting sensing nodes feature a precision time keeper, non-volatile memory for on-board data logging and frequency agile IEEE 802.15.4 transceiver. Sampling rates, sample durations, sensor offsets, sensor gains and on-board shunt calibration are all wirelessly programmable. The sensors can sample pitch link static and dynamic loads at a rate of 32 samples per second, then communicate these wireless data into the helicopter cabin while consuming 250 µW compared to conventional Wheatstone bridge signal conditioning electronics (which draw 72 mW) — an improvement of 288 fold.

MicroStrain, Inc., 802-862-6629, www.microstrain.com



KEY SPECS:
The system converts the component's cyclic strains into DC power using piezoelectric materials.

Digital Load Sensors with USB Output

Loadstar Sensors, Inc. announced the iLoad Series of digital load/force sensors based on its patented capacitive sensing technology. These sensors combine the core load or force sensing function with integrated computing and communications modules to offer Plug and Sense simplicity and ease of use in a rugged, low profile package. The capacitive load sensor with USB output is designed to plug directly into the USB port of a PC and enable users to measure loads, forces or weights without need for any additional signal conditioning, data acquisition or special software. The sensor offers a linear, 0.5V DC to 4.5V DC output proportional to applied loads. No expensive amplification or signal conditioning is required because all electronics are built into the self-contained integrated sensor. It is available immediately in 10, 50, 100, 250 and 500 lb.. capacities to measure both compressive and tensile loads and offer accuracies of 0.25 percent to 0.025 percent of full scale loads. Temperature compensation schemes are built-in for temperatures ranging between -10°C to 40°C for accuracy in most operating conditions with a "tare."

Loadstar Sensors, 650-938-4282, www.loadstarsensors.com

KEY SPECS:
The sensor is designed to plug directly into the USB port of a PC and enable users to measure loads, forces or weights.

Intelligent Power Modules for Energy Efficiency, Reliability in Home Appliance Motors

Infineon Technologies AG introduced a family of integrated intelligent power modules that contain nearly all of the semiconductor components required to drive electronically controlled variable-speed electric motors. The CiPoS (Control Integrated Power System) modules are designed to enable energy-efficient operation of consumer appliances such as washing machines and air conditioners, offering efficiencies of up to 94 percent. The modules incorporate a three-phase inverter power stage with a SOI (Silicon-On-Insulator) gate driver, boot strap diodes and capacitors, and auxiliary circuitry in a compact, fully isolated package. Based on a combination of the company's TrenchStop IGBT (Insulated Gate Bipolar Transistor) and EmCon (Emitter Controlled) diode technology, they are said to eliminate as many as 23 discrete components compared to a design based on discrete components. With a basic drive system such as the type used in a fan blower, requiring nine external components and one microcontroller, the CiPoS modules are ready-to-use for all motor drive systems with a power rating of up to 3 kW. The CiPoS modules also feature a low junction-to-case resistance which can potentially increases output current by up to 20 percent compared to other available modules.

Infineon, 866-951-9519, www.infineon.com/cipos

KEY SPECS:
The CiPoS modules are designed to enable energy-efficiencies of up to 94 percent.