

March 11th 2008

Micropelt's TE-Power-Bolt Generates up to 15 mW Power from Excess Heat - *Makes Wireless Sensors Maintenance Free* -

Micropelt GmbH, manufacturer of thin-film thermoelectric chip-like devices, announces the TE-Power-Bolt, a voltage adjustable thermal battery that uses excess heat to generate electrical energy for devices that consume only a few milliwatts (mW) of power, such as wireless sensor nodes. With its micro-thermogenerator that is built into an M24 steel screw, the Power-Bolt can harvest energy from surfaces and structures from 10 - 20 degrees Celsius over ambient temperature or directly from hot liquids. Output power can range from 0.2 to over 15 mW and is voltage stabilized by an integrated DC-DC converter, which can be set to fixed voltages between 1.2 and 5 Volts.



TE-Power-Bolt
Thermogenerator
with adjustable
voltage

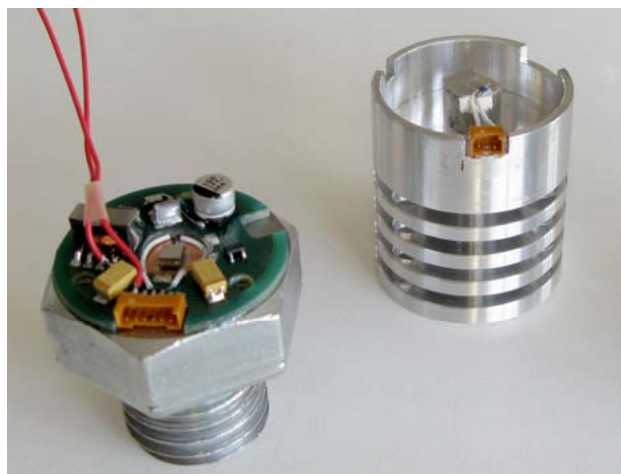
The TE-Power-Bolt is an easy-to-deploy self-sustaining energy supply that sticks out about 2.2" (55 mm) from its host's warm or hot surface. By exposing the cylindrical 1.5" (38.1 mm) diameter aluminium heat sink to fresh air, the TE-Power-Bolt acts as a "never-charge battery" which provides a few milliwatts, depending upon actual thermal conditions.

Continuous air flow multiplies the output instantly. Heat can also be obtained from

liquids by screwing the bolt into the threaded hole of a hot liquid container or a pipe. The design is presently in the prototype phase.

"More and more low-power wireless sensor nodes and similar devices are being offered; however, most industries simply dislike batteries," said Micropelt CEO Fritz Volkert.

"The TE-Power-Bolt can work for them as an infinite maintenance-free battery for infrequent duty cycle applications. As a component manufacturer, we are looking to license this technology to strong industry partners wanting to integrate it into devices or build generic 'green' power supplies."



DC-DC converter integrated within Power-Bolt

About Micropelt

Micropelt GmbH resulted from a seven year research cooperation between Infineon Technologies AG and the Fraunhofer IPM Institute. Micropelt develops and markets miniaturized thermoelectric components, such as Peltier coolers and thermogenerators, based on a patented scalable MEMS micro-structuring wafer platform technology. Dramatically reduced component and feature sizes let Micropelt products reduce power consumption and package size in fiber optics and photonic sensors, provide enormous thermal cycling power to new and existing biochemical applications, and feed wireless sensors and other low-power electronics via high-voltage energy harvesting. The company's strong engineering support facilitates industrialization.

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