

Powercast Debuts RF Energy Harvesting Kit for Wireless Battery Charging



Powercast Corporation, a leader in RF-based wireless power and energy harvesting technology, today announced its Lifetime Power® Energy Harvesting Development Kit for Battery Charging. The kit features near-loss-less energy storage and efficient charging via the THINERGY® Micro-Energy Cell (MEC), a solid-state, rechargeable thin-film micro-battery from Infinite Power Solutions (IPS).

The Lifetime Power Energy Harvesting Development Kit for Battery Charging is composed of a 3-watt Powercaster™ transmitter, a P2110 Powerharvester® receiver evaluation board, a custom-designed battery-charging board, a 1mAh THINERGY MEC evaluation card and other accessories. The kit makes it easy to prototype and develop rechargeable battery-based micro-power systems such as wireless sensor networks that are reliably and perpetually powered by radio waves -- eliminating the expense and hassle of traditional battery replacement. The Texas Instruments eZ430-RF2500 wireless development tool is also included as a demonstration application.

In the kit, Powercast's 915 MHz RF transmitter and receiver energy-harvesting system broadcasts and then converts RF energy and stores it in a capacitor, which then provides a pulsed regulated voltage output to wirelessly trickle charge energy storage devices. Such devices include the paper-thin and long-life THINERGY MEC as well as other thin-film batteries, and traditional rechargeable batteries such as Alkaline, Lithium Ion, or Nickel Metal Hydride (Ni-MH). When embedded into micro-power devices, such as wireless sensors, instrumentation and controls, the included receiver can charge batteries from more than 40 feet away from the included transmitter. Designers could also use other 850-950MHz RF transmitters as a source

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of energy for battery charging.

The kit offers multiple charging options via its custom battery-charging board, which allows the receiver to directly charge a THINERGY MEC, or connect to the THINERGY Application Development Platform (ADP) for enhanced measurement and analysis. The enhanced ADP firmware, available as a free download from IPS, can capture the voltage and current readings from the short charging pulses provided by the Powercast system. The kit's custom charging board also features charge voltage selection, nano-amp low-voltage cut-off, adjustable regulated output voltage, and I/O interfaces for the P2110 Powerharvester receiver.

The included Powercaster transmitter is approved by the FCC (Part 15) and Industry Canada. It is designed for micro-power applications in the commercial, industrial, and defense markets such as remote monitoring (temperature/environmental/security) and building automation.

Broadcasted RF energy creates a perpetual power source, unlike potentially unreliable solar, heat or vibration energy sources, to provide power-over-distance, one-to-many charging, and controllable wireless power (continuous, scheduled or on-demand). A wireless power source enables zero-maintenance devices which deploy to inaccessible locations, and embeds within sealed devices for use in wet or harsh environments.

"Combining our THINERGY rechargeable MECs with Powercast's RF energy harvesting system enables autonomous, self-powered, wireless systems for decades of maintenance-free operation," says Tim Bradow, vice president of marketing for Infinite Power Solutions. "Offering compact design, compelling performance, and power efficiency, we have jointly created a miniature, low-cost, perpetual power supply for a variety of micro-electronic applications."

The Lifetime Power Energy Harvesting Development Kit for Battery Charging is available today for \$900 from Powercast's distributors, Future Electronics and Mouser Electronics.

www.powercastco.com [1]

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