Infinite Power Solutions

PRODUCT BRIEF

ADP-201 THINERGY® Application Development Platform Kit

SUMMARY OF FEATURES

- Ideal platform for evaluating THINERGY Micro-Energy Cells and Energy Harvesting devices in micro-energy applications such as:
  - Wireless sensor nodes (IEEE 802.15.4, Zigbee, Bluetooth low energy, etc.)
  - Powered cards (with radios or biometrics)
- Demonstrates rapid charge, discharge and unrivaled cycling capability of MECs
- User configurable discharge and charge options
- Kit contains 3 MEC Cards, Solar Panel, and Energy Harvester interface connector
- USB interface with data logging
- Backlit LCD display
- Sentry Mode allows easy connection and instrumentation of user applications while providing complete battery protection
- Firmware updates can be performed from any PC with a USB interface

ADP-201 Kit: Battery Lab on a Board

GENERAL DESCRIPTION

The IPS THINERGY® Application Development Platform (ADP) Kit is a unique evaluation and application development tool used to demonstrate the many performance advantages of IPS THINERGY Micro-Energy Cell (MEC) products over conventional batteries. The ADP tool greatly simplifies the typical lab setup for micro-battery testing and is very useful for evaluating battery performance, charging circuits using ambient energy harvesting, and overall system power usage during the development of target applications.

The ADP tool provides a simple method to charge, discharge and monitor THINERGY MECs during device evaluation and system integration. The built-in demo modes provides pre-defined loads (constant resistance, constant current, pulsed current and standard LED load) to discharge the battery while displaying the time, approximate state of charge (fuel gauge), discharge voltage/current, while protecting the cell from over voltage or under voltage conditions. In addition, the ADP serves as a development platform to allow users to develop their own applications on a separate breadboard that can be connected to the "Sentry" inputs, powering the application from the MEC while being monitored by the ADP. THINERGY MECs are soldered to a credit card sized printed circuit board to form a MEC Card Assembly (MCA) for easy handling and insertion into the tool.

The tool continuously displays the battery voltage and state of charge (fuel gauge) during evaluation or while powering the user's application. Built-in safety features protect the battery if the user load becomes shorted or the cell becomes over discharged. The ADP also allows the user to connect various energy harvesting circuits to charge the MEC, even while the MEC is powering a custom application, enabling the user to quickly and easily prototype their entire microelectronic system. Every mode has a built-in timer to monitor how long it takes to charge or discharge the cell under various loads and charging scenarios. Data logging is accomplished through a USB to serial port allowing the user to record charge and discharge behavior as the MECs are tested.

The ADP-201 kit includes the THINERGY ADP Tool, 3 MEC Card Assemblies (MCA225, MCA220, MCA201) that plug into the ADP for evaluation, a power/communications cable, energy harvester interface electronics with ultra-low quiescent current, and a solar panel to demonstrate energy harvesting.

Optional energy harvesting modules (EHMs) and MEC Card Assemblies of each MEC type are available and may be purchased separately. Contact IPS for more information regarding available optional modules.