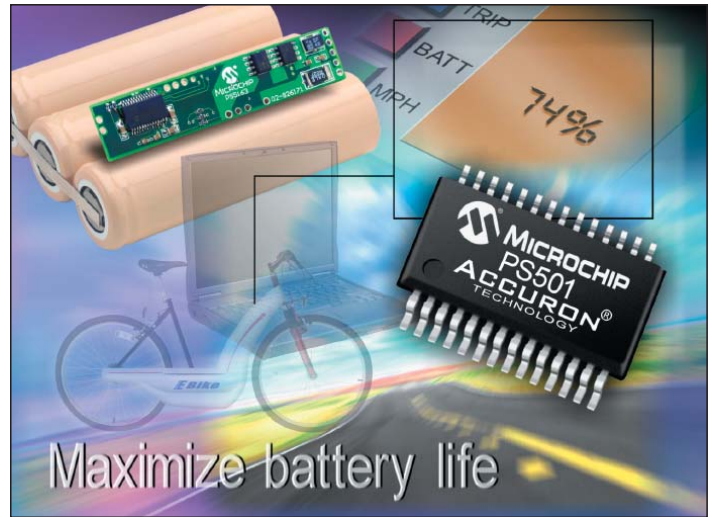
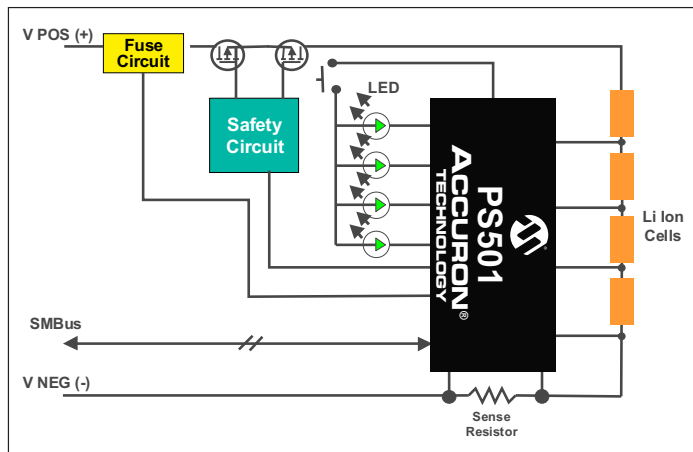


# The Microchip PS501 Battery Manager

The PS501 is a full-featured, SBS compliant battery manager that supports both 2-4 cell Li Ion/Li Polymer or 6-12 cell NiMH/NiCD battery packs. The PS501 incorporates the industry recognized PIC18F RISC microcontroller, 16 Kbytes of field reprogrammable Flash memory, 12 GPIO and a high resolution 16-bit A/D. To further optimize system design, the PS501 integrates a precision internal oscillator, temperature sensor and regulator. The PS501 implements Microchip's proprietary Accuron® technology, with advanced battery management algorithms and user customizable functionality, such as an LED-based State-Of-Charge display, charge control and safety for Lithium rechargeable chemistries. The resulting battery management solution provides the user with accurate State-Of-Charge, battery health and instantaneous battery status.



## PS501 Li Ion/Li Poly Application Block Diagram



## Features:

- Customizable battery algorithms and 3D cell models in 16 Kbytes Flash memory
- Learned battery parameters stored in 256 bytes of EEPROM
- Precise current, voltage and temperature measurement using an integrating 16-bit Sigma Delta A/D converter
- Integrated temperature sensor, voltage regulator and time base
- 12 GPIO for control of safety, charge control or LED SOC display
- Communication using fully compliant SBDData v1.1 command set over SMBus two-wire interface

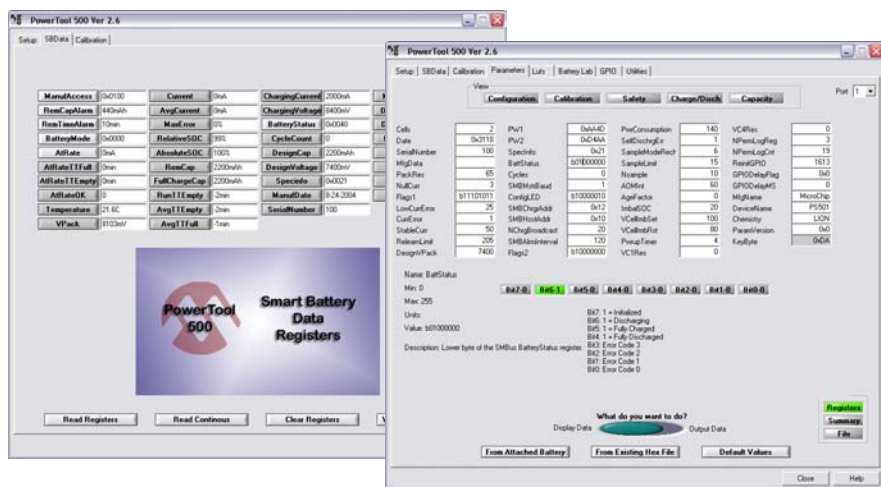
## Additional Information:

- Microchip's web site: [www.microchip.com](http://www.microchip.com)
- Microchip's PS501 Data Sheet, [Order No. DS21818](#)
- Microchip's PS5100 Data Sheet, [Order No. DS21903](#)
- Microchip's PS5162 Data Sheet, [Order No. DS21842](#)
- Microchip's PS5163 Data Sheet, [Order No. DS21851](#)
- Microchip's PS5164 Data Sheet, [Order No. DS21850](#)
- Microchip's PS051 PowerInfo™ 2 Configuration Interface Data Sheet, [Order No. DS21815](#)
- Microchip's PS052 PowerCal™ 2 Calibration Platform Data Sheet, [Order No. DS21817](#)
- Microchip's PS050 PowerTool™ 500 Development Software User's Guide, [Order No. DS21885](#)  
(PowerTool™ 500 may be referenced as PowerTool™ 2 in previous documents)

## Ordering Information

| Product  | Chemistry                   | Configuration                               | Description  |
|----------|-----------------------------|---|--|
| PS501    | Li Ion/Li Poly or NiMH/NiCD | 2-4 cells in series or 6-12 cells in series | IC Single Chip Battery Manager   |
| PS5100   | NiMH or NiCD                | 6-12 cells in series                        | Battery Management Module without Safety   |
| PS5162   | Li Ion/Li Poly              | 2 cells in series                           | Battery Management Module w/ Safety  |
| PS5163   | Li Ion/Li Poly              | 3 cells in series                           | Battery Management Module w/ Safety  |
| PS5164   | Li Ion/Li Poly              | 4 cells in series                           | Battery Management Module w/ Safety  |
| PS051    | All                         | All   | PowerInfo™ 2 Communication Board   |
| PS052    | All                         | All   | PowerCal™ 2 Calibration Board  |
| PS5100EV | NiMH or NiCD                | 6-12 cells in series                        | Evaluation Kit: Includes PS5100 Battery Management Module without Safety, PS051 PowerInfo™ 2 Communication Module, PS050 PowerTool™ 500 Software and Documentation |
| PS5162EV | Li Ion/Li Poly              | 2 cells in series                           | Evaluation Kit: Includes PS5162 Battery Management Module w/ Safety, PS051 PowerInfo™ 2 Communication Module, PS050 PowerTool™ 500 Software and Documentation      |
| PS5163EV | Li Ion/Li Poly              | 3 cells in series                           | Evaluation Kit: Includes PS5163 Battery Management Module w/ Safety, PS051 PowerInfo™ 2 Communication Module, PS050 PowerTool™ 500 Software and Documentation      |
| PS5164EV | Li Ion/Li Poly              | 4 cell in series                            | Evaluation Kit: Includes PS5164 Battery Management Module w/ Safety, PS051 PowerInfo™ 2 Communication Module, PS050 PowerTool™ 500 Software and Documentation      |

### PowerTool™ 500 Software



### PowerCal™ 2 Board



### PowerInfo™ 2 Board



**PowerTool 500 (PS050) software** – PowerTool 500 software is a Windows® based program that provides a comprehensive, user-friendly environment that simplifies both development and production of smart batteries.

**PowerInfo 2 (PS051) hardware** – Quick start RS-232 or USB to SMBus interface board enables complete setup and evaluation of ICs.

**PowerCal 2 (PS052) hardware** – Designed for calibration, programming and testing Microchip based smart batteries in the production environment.

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As of 08/24/04

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