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## PS4160 Evaluation Kit

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### 1.0 INTRODUCTION

The PS4160EV Evaluation Kit provides the opportunity to evaluate the PS401 IC quickly and easily. The evaluation kit contains all of the hardware and software necessary to implement a fully functional smart battery and demonstrate all operating modes. The included PS4160 module is a complete smart battery controller subsystem, based on the Microchip PS401 battery manager with patented Accuron™ technology. The module is designed to operate in a battery pack consisting of three (3) and four (4) series connected Li-based cells. The module consists of the Microchip PS401 battery manager IC, with a four LED SOC display, safety circuit, and an optional connection for an external thermistor.

The included PowerTool™ Windows®-based software can be used to modify the programming in the pre-programmed evaluation module. Although many interdependent parameters must be taken into account when programming the battery manager, the process is simplified with the PowerTool configuration wizard.

### 1.1 Evaluation Kit Contents

The PS4160 Evaluation Kit contains the following hardware, software, and documentation:

- PS4160 Battery Manager Module with LED SOC Display
- PS041 PowerInfo™ Configuration Interface
- PS4160EV CD-ROM
- Power Supply Unit (120/240 VAC input, 15 VDC output)
- RS-232 Cable

The PS4160EV CD-ROM contains:

- PS040 PowerTool Development Software
- PS041 Data Sheet (DS40234)
- PS401 Data Sheet (DS40238)
- PS4160 Data Sheet (DS40235)
- This Product Brief (DS21791)

FIGURE 1-1: BOARD PHOTO



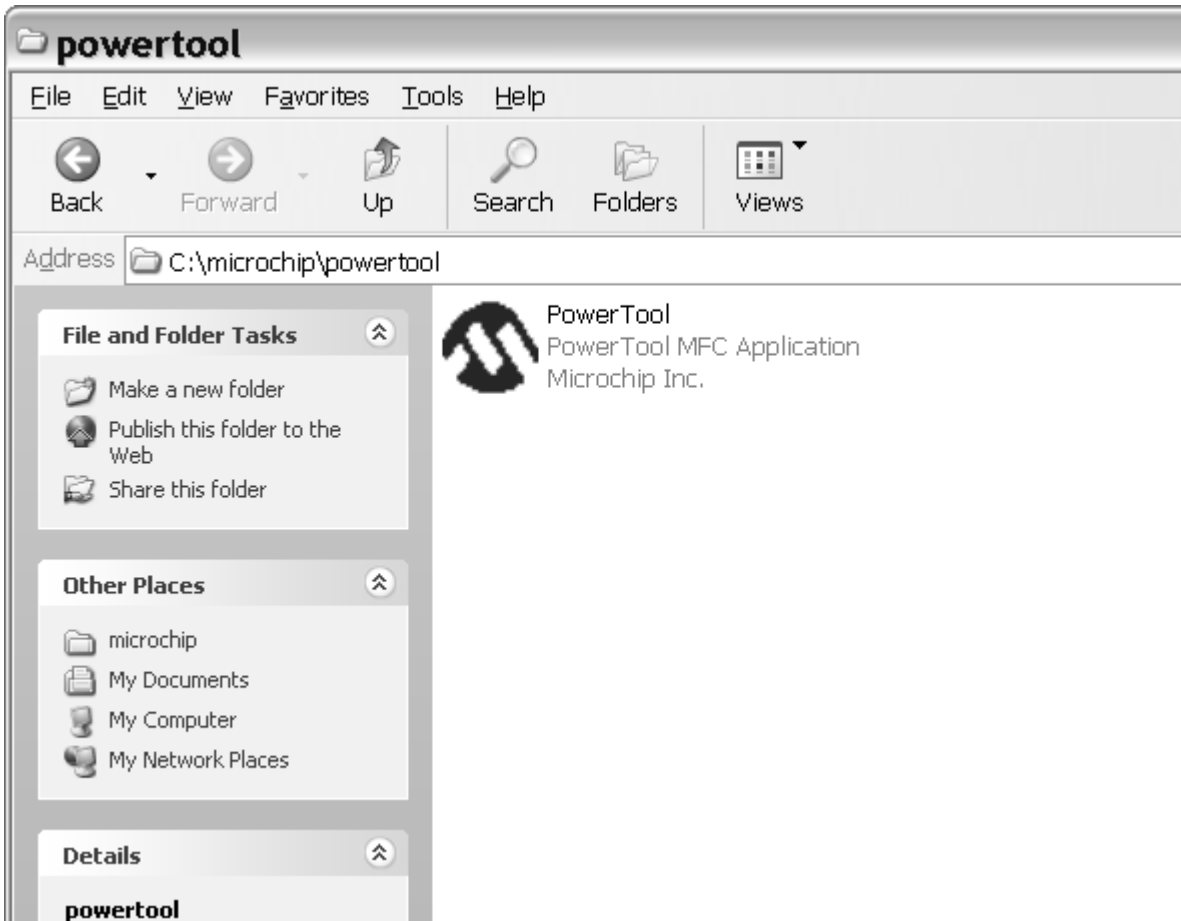
# PS4160EV

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## 2.0 INSTALLATION

The PowerTool software provided on the disk is based on the Windows operating system. To install the software, copy the executable from the CD to a directory of choice on a PC hard drive. PowerTool software cannot be run from a CD-ROM or other read-only media.

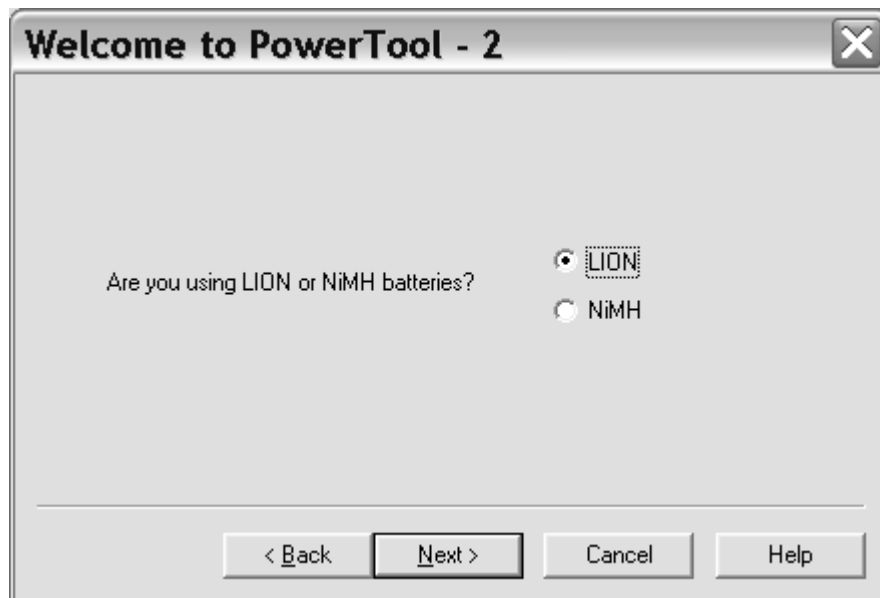
- Double click the PowerTool software executable icon to start the software.



- A dialog box appears to start the pack configuration wizard. Click Next.



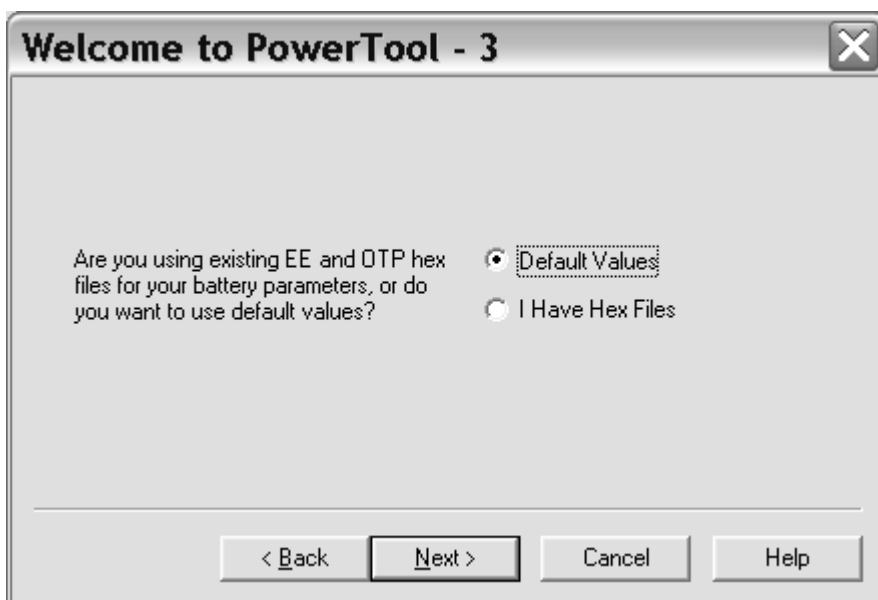
- Choose LION and click Next.



# PS4160EV

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- Choose Default Values and click Next.



- Click Finish. The wizard will begin.



- Follow instructions in the wizard to complete the configuration of a PS4160 pack.

## 3.0 DEVELOPMENT TOOL SUMMARY

Microchip provides all the necessary hardware and software to enable easy tailoring of battery control algorithm parameters and cell performance models, to meet

specific application requirements and attain the highest accuracy available anywhere. Table 3-1 summarizes the development tool offering from Microchip to support the PS4160. Please refer to the Microchip web site for ordering information and design documentation (including schematics) at [www.microchip.com](http://www.microchip.com).

**TABLE 3-1: MICROCHIP DEVELOPMENT TOOL SUMMARY**

Development Tool	Use
PowerInfo™ hardware with PowerTool™ software (PS041)	Read and write Smart Battery data values, EEPROM programming, OTP EPROM programming
PowerCal™ hardware with PowerTool software (PS042)	Read and write Smart Battery data values, EEPROM programming, OTP EPROM programming, pack calibration, pack test

## 3.1 Reference Documents

This data sheet provides an overview of the PS4160 Battery Manager Module. For further information on the PS401 and development tool operations, please refer to the following documents available for download at [www.microchip.com](http://www.microchip.com).

**TABLE 3-2: MICROCHIP REFERENCE DOCUMENTS**

Document Number	Documents Available
DS40238	PS401 Single Chip Battery Manager - Lithium Chemistries Data Sheet (IC Products)
DS40234	PS041 PowerInfo Configuration Interface Product Brief
DS40237	PS042 PowerCal Calibration Platform Data Sheet

# PS4160EV

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NOTES:

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