MICROCHIP

PS4200EV

PS4200 Evaluation Kit

1.0   INTRODUCTION

The PS4200EV evaluation kit provides the opportunity to evaluate the PS402 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 PS4200 module is a complete smart battery controller subsystem, based on the Microchip PS402 battery manager with patented Accuron™ technology. The module is designed to operate in a battery pack consisting of six (6) to ten (10) series connected Ni-based cells. The module consists of the Microchip PS402 battery manager IC, with a four LED SOC display 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 inter-dependent 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 PS4200 Evaluation Kit contains the following hardware, software, and documentation:
- PS4200
- PS041
- PS4200EV CD-ROM
- Power Supply Unit (120V input, 12V output)
- RS-232 Cable

The PS4200EV CD-ROM contains:
- PS040 PowerTool Development Software
- PS041 Data Sheet (DS40234)
- PS402 Data Sheet (DS21766)
- PS4200 Data Sheet (DS21768)
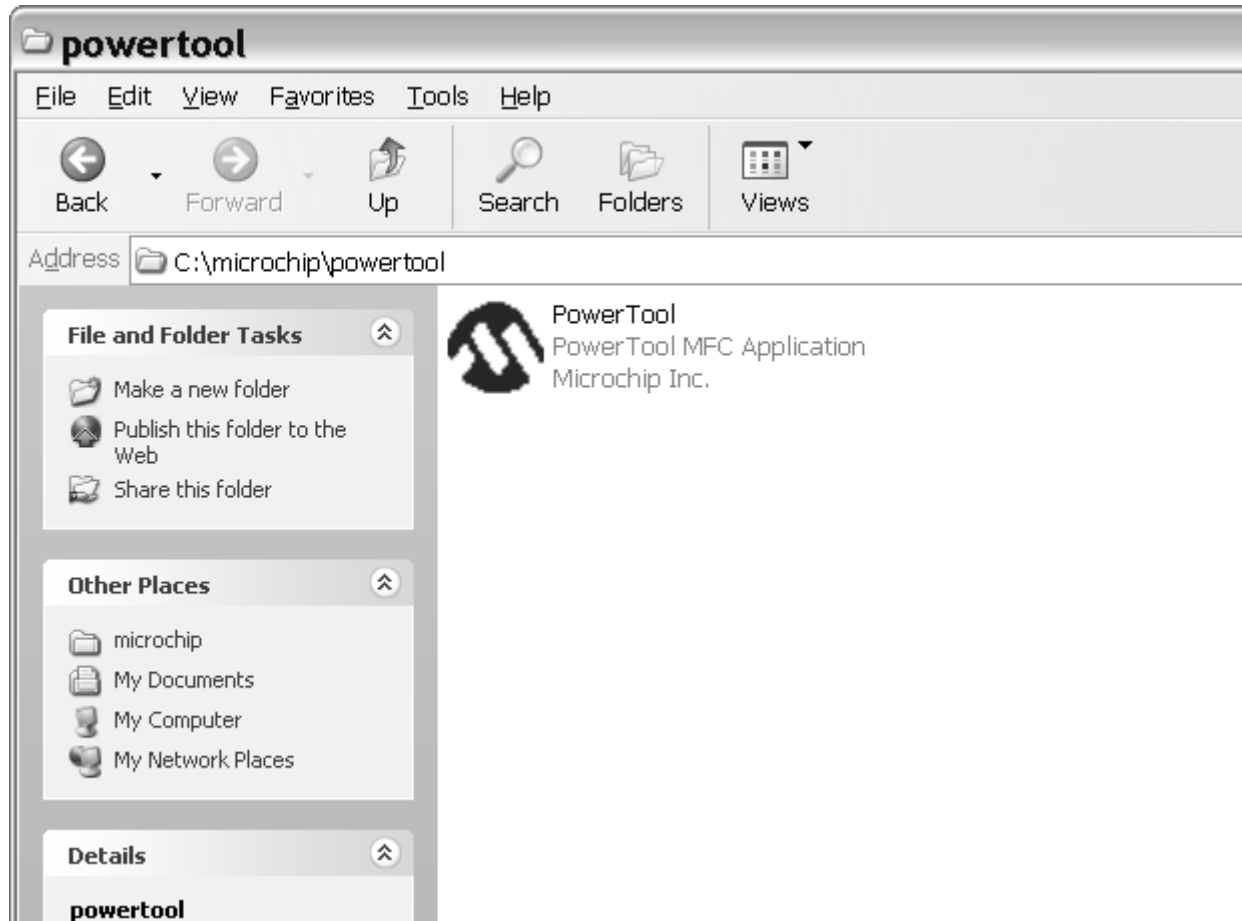- This Product Brief (DS21787)

FIGURE 1-1:   BOARD PHOTO

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 cannot be run from a CD-ROM or other read-only media.
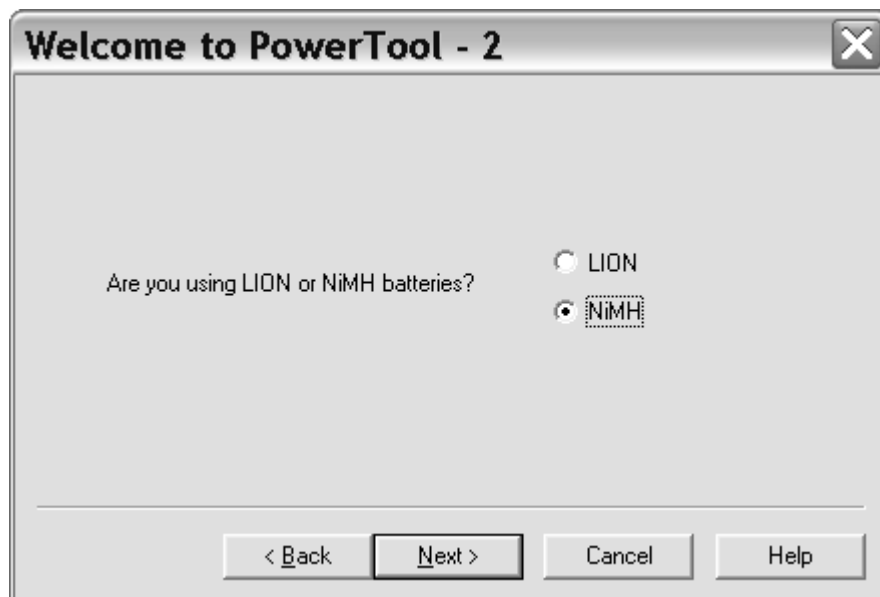
• Double click the PowerTool software executable icon to start the software.

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

Welcome to PowerTool

Would you like to start the P4 Wizard?

- ● Yes
- ○ No

☐ Do not show this message again

[< Back] [Next >] [Cancel] [Help]

- Choose NiMH and click Next.

Welcome to PowerTool - 2

Are you using LION or NiMH batteries?

- ○ LION
- ● NiMH

[< Back] [Next >] [Cancel] [Help]

PS4200EV

- Choose Default Values and click Next.

Welcome to PowerTool - 3

Are you using existing EE and OTP hex files for your battery parameters, or do you want to use default values?

○ Default Values
○ I Have Hex Files

< Back   Next >   Cancel   Help
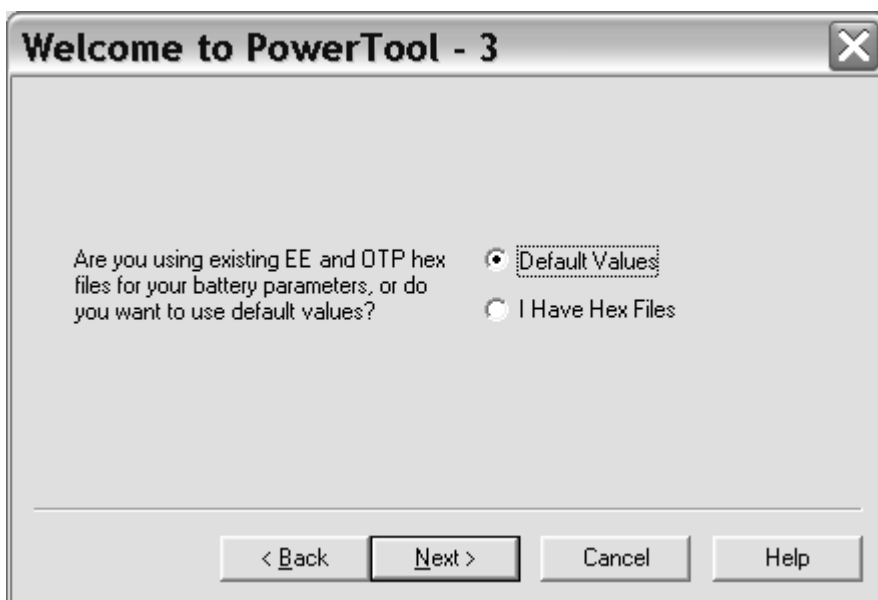
- Click Finish. The wizard will begin.

Welcome to PowerTool - 4

That's it, Press 'Finish' to begin the P4 Wizard.

< Back   Finish   Cancel   Help

- Follow instructions in the wizard to complete the configuration of a PS4200 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 PS4200. Please refer to the Microchip web site for ordering information and design documentation (including schematics) at 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 PS4200 Battery Manager Module. For further information on the PS402 and development tool operations, please refer to the following documents available for download at www.microchip.com.

TABLE 3-2: MICROCHIP REFERENCE DOCUMENTS

Document Number	Documents Available
DS21766	PS402 Single Chip Battery Manager - Nickel Chemistries Data Sheet (IC Products)
DS40234	PS041 PowerInfo Configuration Interface Product Brief
DS40237	PS042 PowerCal Calibration Platform Data Sheet

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