

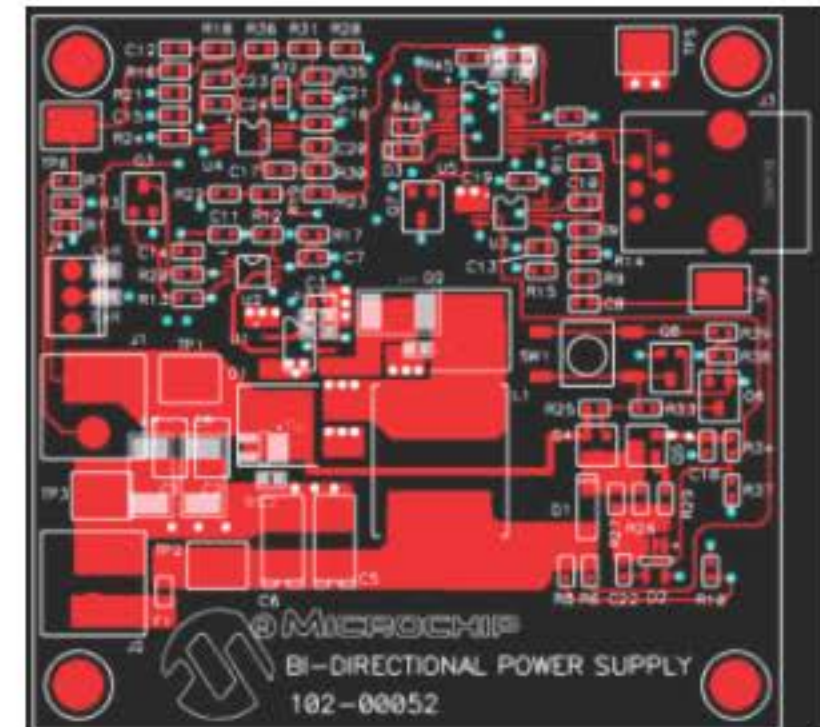
# MCP1630V Bidirectional 4 Cell Li-Ion Charger Ref Design

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Part Number: MCP1630RD-DDBK3

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The MCP1630V Bi-directional 4 Cell Li-Ion Charger Reference Design demonstrates the use of a bidirectional buck-boost converter used to charge multiple series cell Li-Ion batteries with the presence of an input source (boost) and provide a regulated output voltage when the input source is removed (buck). The board also serves as a platform to evaluate the MCP1630V device.



## Features

## Package Contents

- Four Cell Li-Ion Battery Charger operates stand-alone. (Additional firmware added allows the charger to communicate with smart battery packs)
- Charges four cell Li-Ion battery pack from 6.5V to 7.0V Input (complete precondition, constant current and constant voltage charge algorithm in firmware)
- Regulates input dc bus voltage, (steps battery pack voltage down), to 6.0V when input source is removed (providing uninterrupted power source for system)
- ON/OFF button used to enable and disable system, low IQ drain on the battery when disabled ( $< 10 \mu A$ )
- Output over-voltage protection in the event of open battery connections
- High efficiency over entire operating input voltage range (94% typical)
- PIC16F88 is used to generate ref Voltage and Oscillator signal at 500 kHz frequency at maximum duty cycle
- Proprietary features can be added by modifying the firmware contained in the PIC16F88
- Factory programmed source code is available

## Documentation & Software

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| Documents                                                            | Last Updated           | Size  |                                                                                       |
|----------------------------------------------------------------------|------------------------|-------|---------------------------------------------------------------------------------------|
| MCP1630/MCP1630V Data Sheet                                          | 2/5/2013 2:41:28 PM    | 345KB |  |
| MCP1630V Bidirectional 4 Cell Li-Ion Charger Ref Design Gerbers      | 11/29/2006 10:02:20 AM | 209KB |  |
| MCP1630V Bidirectional 4 Cell Li-Ion Charger Ref Design Firmware     | 11/29/2006 10:00:42 AM | 35KB  |  |
| MCP1630V Bidirectional 4 Cell Li-Ion Charger Ref Design User's Guide | 11/29/2006 9:56:14 AM  | 1MB   |  |