EVKT-MP2791-0000 Product Brief

MP2791 Evaluation Kit

7-Cell to 14-Cell, High-Accuracy Battery Monitor and Protector with Coulomb Counting

The MP2791 is a robust battery management device that provides a complete analog front-end (AFE) monitoring and protection solution. It is designed for 7-cell to 14-cell series battery packs, with an absolute maximum voltage exceeding 75V on particular pins. The MP2791DFP-0000 supports I²C communication.

The MP2791 integrates two analog-to-digital converters (ADCs). The first ADC measures each channel's differential cell voltage (up to 10 channels), die temperature, and 4-channel temperature via an external NTC thermistor. The second ADC measures the charge and discharge currents via an external current-sense resistor. The MP2791 also features high-side MOSFETs (HS-FETs).

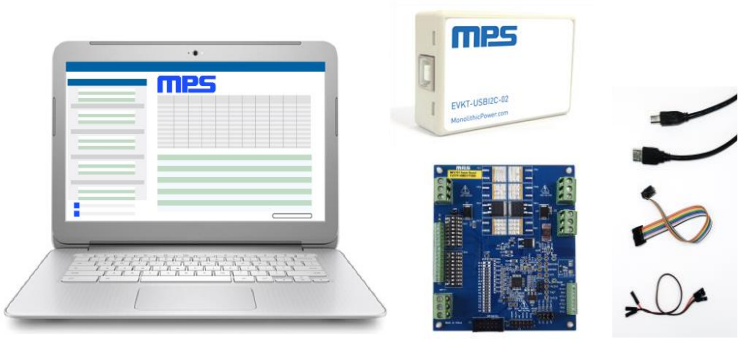
Full protection features include over-current protection (OCP), short-circuit protection (SCP), battery under-voltage protection (UVP), battery over-voltage protection (OVP), and high/low-temperature protection. All the protections have configurable thresholds.

The MP2791 also integrates balancing MOSFETs to equalize mismatched cells, with the option to drive the external transistors.

The MP2791 has an optimized baseline current consumption that is determined by the operating mode.

Kit Contents

- MP2791 evaluation board (EV2791-0000-FP-00A)
- Communication Interface with Accessories (EVKT-USBI2C-02)
  - USB to I²C Communication Interface
  - Ribbon Cable
  - USB Cable
- GUI installation file and supplemental documents available online



*Laptop not included

Feature	Specifications
Battery Pack Voltage	18V to 65.8V
Cell Voltage	0V to 5V
Operating Systems Supported	Windows 7 or later
System Requirements	Minimum 25.6MB free
GUI Software	MP2791 GUI
EVB Size (LxW)	11.3cmx9.6cm

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Quick Start (Refer to the user guide for more details.) (1) (2)

1. Install the GUI software.
2. Connect the communication interface to the evaluation board with a ribbon cable and ensure they are connected.
3. Connect the communication interface to the computer.
4. Turn on the power supply of the evaluation board, then start up the GUI software. It should check the connection automatically. If the connection is not successful, “Disconnected” will appear at the bottom of the screen. Otherwise, “Connected” appears at the bottom of the screen.
5. The monitor and control register information can be seen in the Monitor and Control bar.

Notes:

1) It is important to adhere to the order of steps 1 and 2. Failing to do so may cause damage to the communication pins (SCL and SDA) during a hot plug event.
2) The kit offers rapid application assessment and requires minimal external components.

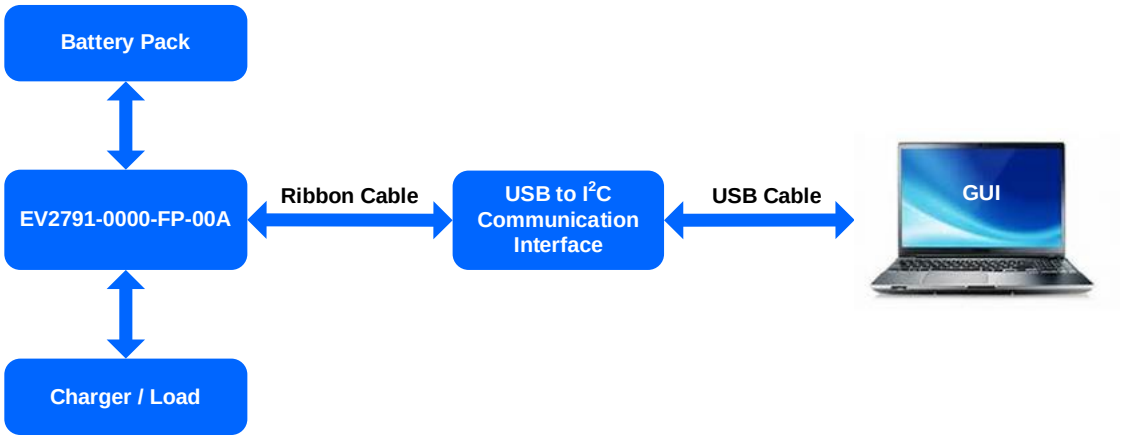

Figure 1: EVKT-MP2791-0000 Evaluation Kit Set-Up

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REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	8/25/2023	Initial Release	-

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