EVKT-MP2672A Product Brief

MP2672A Evaluation Kit

Boost Charger with Cell Balancing for 2 Cells Lithium-Ion Batteries in Series

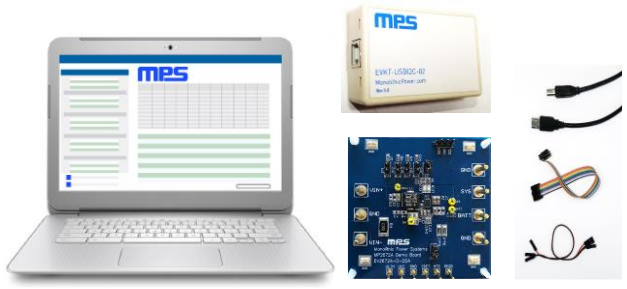
The MP2672A is a highly integrated, flexible switch-mode battery charger IC for lithium-ion batteries with two cells in series. It can be used in a wide range of portable applications.

When input power is present, the MP2672A operates in boost mode. When charging is enabled, the device automatically detects the battery voltage, then charges the battery in three phases: pre-charge, constant current charge, and constant voltage charge. Other features include charge termination and auto-recharge.

The device also has a narrow voltage DC (NVDC) power structure. When the battery is depleted, the MP2672A regulates the system output at the pre-charge threshold voltage. This powers the system instantly, and charges the battery via the battery FET. The device also offers cell balancing, in which it monitors the voltage across each cell, then equalizes the cell voltages if the difference between the cells exceeds the mismatch threshold.

The MP2672A has two configuration modes: standalone mode and host-control mode. In standalone mode, the charging parameters can be configured by hardware pins. In host-control mode, the charging parameters can be configured by the I²C registers.

The MP2672A has diverse and robust protections. It provides a thermal regulation loop to decrease the charge current in case the junction temperature exceeds the thermal loop threshold. It also has battery temperature protection compliant with JEITA standards. Other safety features include input over-voltage protection (OVP), battery OVP, thermal shutdown, a watchdog timer, and a configurable back-up timer to prevent prolonged charging of a dead battery.



*Laptop not included

Feature	Specification
Supply for Board	4.5V to 6.0V
Operating Input Voltage	4.5V to 6.0V
Battery Regulation Voltage	8.4V (I²C-configurable)
Charge Current	2A (I²C-configurable)
Pre-Charge Threshold	6.5V (I²C-configurable)
Cell Voltage Mismatch Threshold	50mV (I²C-configurable)
System Current	2.5A maximum
System Voltage	6.7V (I²C-configurable)
Operating Systems Supported	Windows XP, 7, or later
System Requirements	Minimum 22.2MB free
GUI Software	MP2672A V1.2
EVB Size (LxW)	6.35cmx6.35cm

Kit Contents

- MP2672A evaluation board (EV2672A-D-00A)
- Communication interface with accessories (EVKT-USBI2C-02):
  - USB to I²C communication interface
  - Ribbon cable
  - USB cable

Note: The GUI installation file and supplemental documents can be downloaded from the MPS website.

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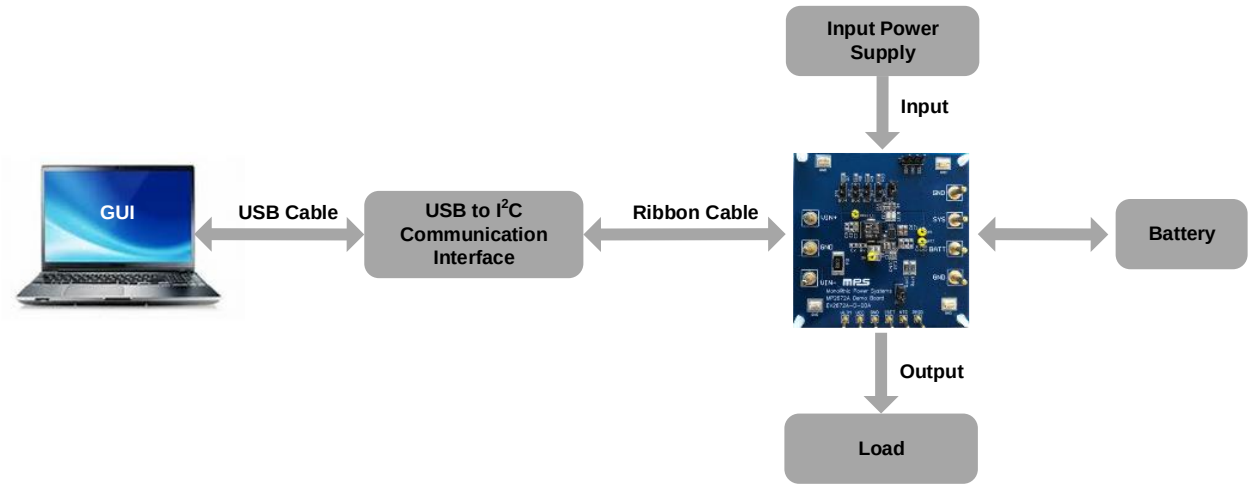
Quick Start (Refer to the user guide for more details.)

1. Install the GUI software.
2. Use the provided ribbon cable to connect the EVB to the I^2C communication interface.
3. Preset the power supply output to be between 4.5V and 6.0V, then connect the EVB.
4. Connect the communication interface to the PC, and turn the power supply on.
5. Open the GUI software and program as needed.

* *Kit offers rapid application assessment and requires minimal external components.*



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Revision History

Revision #	Revision Date	Description	Pages Updated
1.0	11/6/2020	Initial Release	-

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