



# SC8915 High Efficiency, Synchronous, Bi-Directional Buck-Boost Charge Converter with I2C Interface

## 1 Description

SC8915 is a synchronous buck-boost Li-ion battery charger which also supports reverse discharging operation. It integrates two power MOSFETs and can support up to 36V battery voltage and up to 26V VBUS. It can be used to effectively manage the charging process for 1~6 cell Li-ion batteries no matter adapter voltage is higher, lower or equal to the battery voltage. When a system needs to generate an output from the battery, SC8915 can also discharge the cells and delivers desired output no matter it is higher, lower or equal to the battery voltage.

Through its I2C interface, user can set the charging / discharging mode easily, and program the charging current, charging voltage, reserve output voltage, current limits, switching frequency and other parameters flexibly. Besides that, SC8915 integrates 10-bit ADC, so user can read the VBUS / VBAT voltage and current in real time, simplifying the system design.

SC8915 supports internal current limit, over voltage protection, output short protection and over temperature protections to ensure safety under different abnormal conditions.

SC8915 adopts 40 pin QFN 6x6 package.

## 3 Applications

- Power Bank
- USB Power Delivery
- Type C Hub
- Industrial Power Supplies

## 2 Features

- Buck-Boost Battery Charger for 1 to 6 Cell Batteries
- Charging Management including Trickle Charge, CC Charge, CV Charge and Charge Termination
- Buck-Boost Reverse Discharging Mode
- Integrates Two Power MOSFETs
- Wide  $V_{BAT}$  Range: 2.5 V to 36 V, 40V sustainable
- Wide  $V_{BUS}$  Range: 2.5 V to 26 V, 30V sustainable
- I2C Programmable Charging Current and Voltage
- I2C Programmable Discharging Output Voltage
- I2C Programmable Input / Output Current Limit
- I2C Programmable Switching Frequency
- High Efficiency Buck-Boost Conversion
- 10-bit ADC resources
- Charging Status Indication
- Event Detections, including Automatic Adapter Insert and Automatic Load Insert Detection
- Power Path Control
- Under Voltage Protection, Over Voltage Protection, Over Current Protection, Short Circuit Protection and Thermal Shutdown Protection
- QFN-40 Package

## 4 Device Information

Part Number	Package	Dimension
SC8915QDHR	40 pin QFN	6.0mm x 6.0mm x 0.75mm