

RAA489118

Buck-Boost Battery Charger with SMBus Interface for General 30V and USB PD EPR

The [RAA489118](#) is a buck-boost charger supporting 30V input and 30V battery. The RAA489118 provides charging and protection features for power tools, portable vacuums, battery-powered lawn mowers, power banks, and additional system bus regulation for notebooks. It also supports any USB-C interface platform including USB PD EPR. The advanced Renesas R3™ technology provides highly efficient light-load operation and fast transient response.

In Charging mode, the RAA489118 accepts input power from a wide range of DC power sources (such as conventional AC/DC charger adapters, USB PD ports, and travel adapters) and safely charges battery packs with up to 7 serially connected battery cells up to 30V. The device can operate with only a battery, only an adapter, or with both connected.

The RAA489118 supports reverse buck, reverse boost, or reverse buck-boost operation to the input port from 2-cell to 7-cell batteries.

The RAA489118 provides programming resistor options including autonomous charging, max output voltages, adapter current limit. Additionally, it provides serial communication that enables programming of many critical parameters to deliver a customized solution.

Features

- Buck-boost charger for 2 to 7-cell up to 30V batteries
- Optional BFET
- Input voltage range: 3.9V to 30V (no dead zone)
- System output voltage: 2.4V to 30.8V
- Autonomous charging option (automatic completion of charging)
- Pass-Through mode in forward direction
- Adapter current and battery current monitor (AMON/BMON)
- Trickle charging of depleted battery
- Reverse buck, boost, and buck-boost operation from battery
- Battery Ship mode option
- 4×4 32 Ld TQFN package compatible with the ISL9238/RAA489108 family of parts

Applications

- Standalone battery charging for 2 to 7-cell batteries, including batteries for power tools, portable vacuums, battery-powered lawn mowers, drones
- 2-cell to 7-cell tablets, Ultrabooks, notebooks, power banks, and any USB-C interface portable device requiring batteries

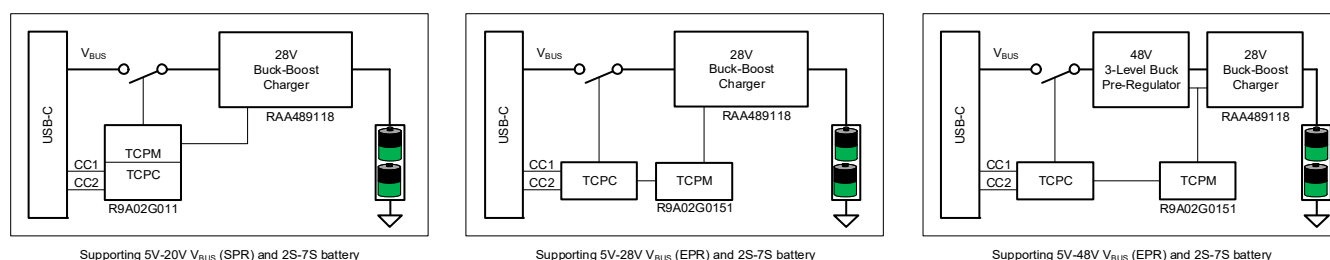


Figure 1. Full-Featured Architecture Solutions Enabled by RAA489118