EA Battery Simulator
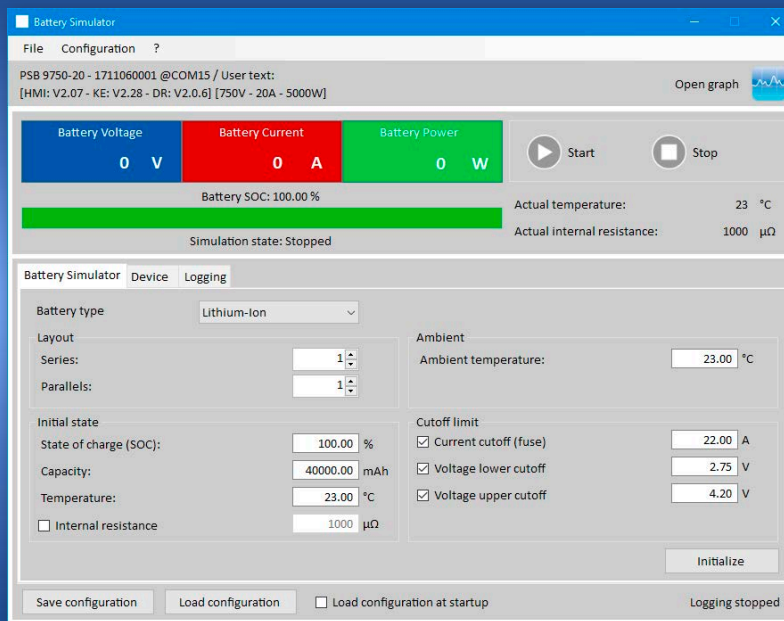
Battery simulation for PSB power supply series

The **EA Battery Simulator** (EABS) is a Windows software with a graphical user interface, made to control all bidirectional devices of series EA-PSB 9000 and EA-PSB 10000. The bidirectional nature of these devices, which enables them work as energy source or sink, is essential for the simulation.

The software is used to simulate lead-acid and lithium-ion batteries, including their electrical and chemical characteristics when charging or discharging. This is accomplished by the implemented set of value tables and parameter libraries, which have been developed and collected in cooperation with the renowned Fraunhofer institute. Switchable battery profiles, which can be edited to match the requirements of the target application, don't only define basic battery parameters such as battery capacity, internal resistance or the state of charge, but also test parameters such as ambient temperature.

The physical simulation is done by the power supply device, being controlled mostly automatically by the software during test runs. The user can furthermore activate data recording to log files, plus have it visualized in a color graph window.

Main features of the simulation:

- The power supply can replace a wide spectrum of battery sizes due to its big voltage and current range
- Simulates lithium-ion and lead-acid batteries, more battery types can be added with updates
- Simulates or calculates battery specific values such as battery voltage, charging/discharging current, internal resistance and body temperature, as well as state of charge
- Battery simulation has a huge benefit in development and product end tests of, for example, …
  - Battery chargers and battery management systems
  - Batteries of various kinds (charge/discharge)

The software is optionally available and requires a purchasable license dongle in form of an USB stick In order to operate the dongle, only a free USB port is required. Drivers and documentation are included.