# BattLab-One

The BattLab-One simulates standard battery voltages and captures the current consumption profile of your device. Then use the BattLab-One software to optimize battery life using "what-if" analysis.

Current Profiler

- Captures both active event and sleep current from 10uA to 500mA

- Trigger input to capture firmware states and their impact on overall battery life

- 1kHz Sample rate, 16-bit delta sigma ADC

- Long active event capture duration from seconds to hours

- Low/no burden voltage across all ranges (BattLab-One provides PSU output)

- Interactive/detailed active current plot
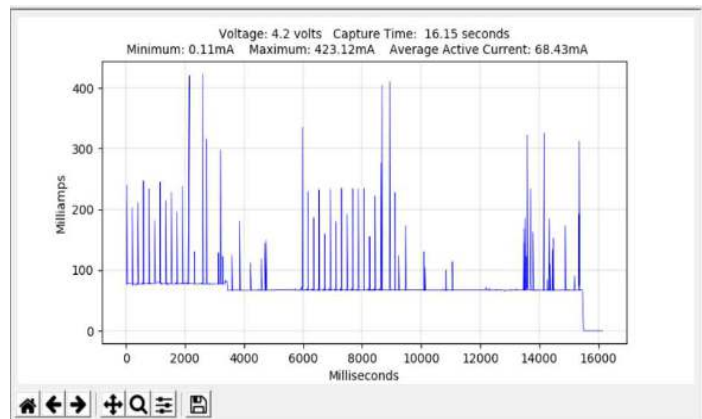

Battery Simulation
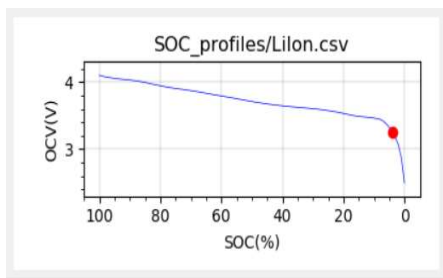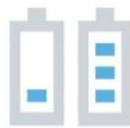
- MSP430 microcontroller-based device that simulates standard batteries for Li-Ion, LiFePO4, Alkaline, NiMh, NiCd

- Provides voltages of 1.2V, 1.5V, 2.4V, 3.0V, 3.2, 3.6V, 3.7V, 4.5V at up to 450 mA, perfect for measuring your ESP8266 devices power demands.

- State of charge (SOC) curves and Cutoff voltage display

Battery Life Optimization
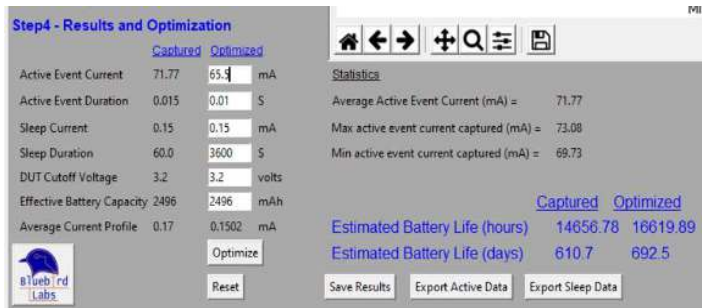
- "What-if "analysis to optimize the battery life of your product

- Save profiles so you can compare your device under test (DUT) current profiles

- Export captured data to CSV file

- USB 2.0 Type B connection to PC

- BNC Trigger Input to capture firmware events

- USB power and data isolated from PSU output to avoid ground loops

- Support for Windows 7,8,10

- Open-source hardware and software
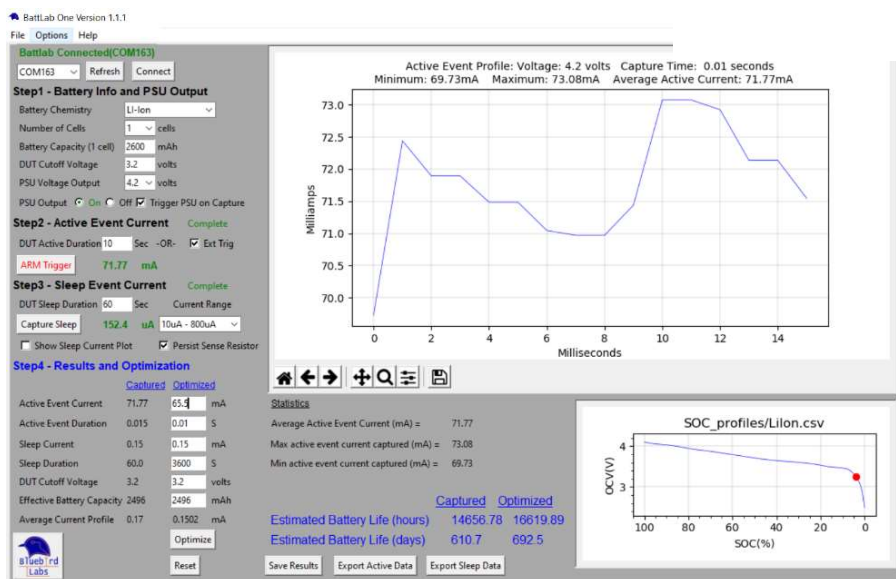
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