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The OpenUPS2 was designed to provide user specified regulated power output from a wide input voltage or battery backup, microprocessor assisted LiFePO4 battery charging and cell balancing in a single PCBA. Battery cells are inserted in the device, no need for special cabling between cells and UPS. The UPS contains a synchronous boost converter with high accuracy voltage and current regulation and automatic system power path selection from adapter or battery. It charges the battery in three phases: preconditioning, constant current mode and constant voltage mode.

- **Fuel Gauge.** Open-UPS provides accurate fuel gauge capabilities by precisely measuring the input and output current flow. In case of low battery situations, the system can send an ON/OFF pulse (or by reporting remaining battery capacity via USB) to a motherboard in an attempt to gracefully shut down the system.

- **Intelligent UPS, USB interface, SMBUS slave.** Communication can be done over USB and the device has also SMBUS reporting capability. Windows detects OpenUPS as Battery and automatically shows battery in the system tray.

- $V(\text{In})$ has to be $\leq V(\text{Out})$. If $V(\text{In}) > V(\text{Out})$ output will follow $V(\text{In})$.

OpenUPS2 has Windows support and API allowing developers to interface to custom applications.

Output and settings can be monitored via custom software applications, 2nd battery status shows on all Windows systems. Windows detects device as "Battery", no special drivers required.

Full feature list:

- 3x 18650 LiFePO4 Batteries (NOT included)
- USB interface, works with Windows devices (Linux API planned)
- SMBUS slave
- Input between 11-24V
- Programmable voltage thresholds
- Generate any output voltage between 12-24V, booster based design
- Supports LiFePO4 battery chemistry
- 3 state charger (precharge, constant current, constant voltage)
- Balances 3 series batteries
- Charge voltage 3x3.5V, charge current 1A, precharge current 0.3A
- Coulomb counting
- Battery temperature monitoring for each cell and temp compensated charge
- Start/Stop button
- Relay output
- mini-FIT JR connectors
- LED indicator + External LED connection
- Motherboard ON/OFF pulse control
- Missing battery cells detection
- Ultra low power consumption (1uA- in Deep Sleep mode) or (530uA- in Sleep mode)
- Windows detects device as "Battery", no special drivers required
- Software Windows 10/11 compatible.

Scope of supply:

- OpenUPS2 board (without batteries)
- 2x 4pol cables
- 1x USB-cable internal
- 1x Jumper-cable internal