

## Introduction

The LattePanda Sigma UPS is a robust and flexible power backup solution tailored for the [LattePanda Sigma x86 Windows / Linux Single Board Computer Server](#).

Utilizing **four 18650 lithium-ion batteries** as storage cells, it ensures uninterrupted power delivery even during sudden power outages. This UPS supports **dual power input interfaces: Type-C PD (20V, 100W) and 5.5×2.5mm DC Jack (19-24V, ≥90W)**, providing flexibility for various power setups. Its compact design and advanced power management capabilities make it ideal for critical applications requiring stability, such as IoT systems, edge computing, and robotics.

## Automatic Power Switching with HID-UPS Protocol

The UPS automatically transitions to battery power when external power is interrupted, safeguarding the LattePanda Sigma from damage due to sudden outages. With HID-UPS protocol support, the module is recognized as a battery device by operating systems, enabling system power management features such as power-saving modes and automatic shutdown. This functionality mirrors the behavior of a laptop's internal battery and enhances operational efficiency in power-sensitive environments.

## Open-Source Arduino Integration for Customization

The UPS incorporates the HID-UPS protocol through Arduino, with fully open-source code. This enables users to develop customized battery management algorithms, optimize energy utilization, and set charging voltage limits to prolong battery life.

## Energy-Efficient Direct Battery Power

Unlike conventional UPS systems, the LattePanda Sigma UPS directly powers the LattePanda Sigma through its four 18650 batteries, eliminating energy losses caused by boost or buck circuits. This efficient design maximizes battery life, providing up to 8 hours of continuous operation under typical conditions. It ensures reliable performance during extended outages, making it ideal for applications requiring sustained uptime.



Figure: Install the 18650 lithium battery into the the LattePanda Sigma development board



Figure: Mounting the UPS to the LattePanda Sigma Single Board Computer

### Specification

Power supply interface

USB Type-C PD protocol

Voltage requirement: 20V

Power requirement: 100W

DC Jack 5.5×2.5mm

Voltage requirement: 19~24V

Power requirement:  $\geq 90\text{W}$

Battery type: 3.7V 18650 lithium-ion battery

Charging current: 2A

Compatible LattePanda Development boards: LattePanda Sigma

Operating temperature: 0~40°C

## Documents

[Product wiki](#)

[User Instructions](#)

[FAQ](#)

## Shipping List

LattePanda Sigma UPS ×1

LattePanda Sigma UPS Power Cable ×1

LattePanda Sigma UPS Signal Ribbon Cable ×1

Heatsink ×1

Screw Pack ×1

M3×30 Single-head Copper Pillar ×4

M3×6 Screws ×5

M3 Nuts ×5