Introduction

Thank you for choosing the **SMLIGHT SLWF-09**, our most **flexible, modular, and feature-rich LED controller** to date.
Designed for enthusiasts, makers, and professionals, the SLWF-09 combines **ESP32 processing power** with the user-friendly **WLED firmware** to deliver stunning lighting effects for addressable LED strips.

Whether you need a **simple Wi-Fi setup** or a **professional wired installation with PoE**, the SLWF-09 adapts to your needs with **plug-and-play add-on modules**.

Key Features

- **ESP32-based** with 16 MB flash – powerful, reliable, and customizable.
- **Pre-flashed with WLED** – start controlling your LEDs immediately.
- **Modular add-on support**:
  - **Ethernet Module** – stable wired network connectivity.
  - ⚡ **PoE Module** – single-cable power and data.
  - **Microphone Module** – unlock sound-reactive effects in WLED.
- Compatible with popular LED types: WS2812B, SK6812, APA102, and more (5V–12V).
- Supports **two LED channels by default**, expandable up to six via GPIO.
- Integrates seamlessly with **Home Assistant**, Node-RED, and other smart home platforms.

What’s in the Box

- **SLWF-09 main controller board**
- Quick-start guide
- (Optional) Ethernet, PoE, or Microphone add-on modules if purchased together

About This Manual

This manual will guide you through:

1. **Hardware overview** – understanding your SLWF-09 and add-ons
2. **Wiring and installation** – safe connection of LEDs and power
3. **Firmware setup** – configuring WLED and integrations
4. **GPIO allocation** – reference table for advanced users
5. **Troubleshooting** – solutions to common issues

Important Notes

- Always disconnect power before attaching or removing add-on modules.
- Use a compatible power source matching your LED voltage (5V, 12V).
- If using the PoE module, ensure your network switch or injector supports IEEE 802.3af and you use 5V LED strip

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