RGBZONE SP108E

RGBZONE SP108E WiFi LED Controller User Manual

Model: SP108E

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1. INTRODUCTION

The RGBZONE SP108E WiFi LED Controller is designed for controlling addressable LED strips and modules. It offers versatile control options via a smartphone application, supporting both IOS and Android devices. This controller is compatible with a wide range of LED driver ICs and provides numerous dynamic and static color modes to enhance your lighting experience.

Image 1.1: The RGBZONE SP108E WiFi LED Controller, shown with the included 3-pin connector cable and screwdriver.

2. PACKAGE CONTENTS

Please verify that all items listed below are present in your package:

- 1 x RGBZONE SP108E WiFi LED Controller
- 1 x 3PIN Connector Cable
- 1 x Screwdriver
- 1 x User Manual (this document)

3. SPECIFICATIONS

Feature	Detail
Model	SP108E
Input Voltage	DC 5V~24V
Max Control Pixels	2048 pixels
Max Wattage	144W

Control Method	WiFi (2.4G only), App Control (IOS 10.0+, Android 4.4+)
Supported ICs	WS2811, WS2812B, WS2801, SK6812, SK6812-RGBW, WS2813, LPD6803, LPD8806, APA102, TM1913, UCS1903, SM16703, DMX512, etc. (Does not support 5050RGB or RGBW LED strips without ICs)
Dimensions	85mm x 45mm x 23mm (Controller body)
Operating Modes	AP (Access Point) Mode, STA (Station) Mode
Features	180 dynamic modes, 8 single color modes, 16 million static colors, color capture from image, adjustable brightness/speed, reverse connection protection, hot swap protection, save user settings.

Image 3.1: Physical dimensions of the SP108E WiFi LED Controller.

Image 3.2: List of compatible LED driver ICs and the pin assignments for the controller's output ports.

4. SETUP GUIDE

4.1. Hardware Connection

1. **Connect LED Strip:** Identify the data (DAT), clock (CLK) if applicable, VCC, and GND pins on your addressable LED strip. Connect these to the corresponding output ports on the SP108E controller.
   - For single-wire ICs (e.g., WS2812B, WS2811, SK6812): Connect DAT, VCC, and GND. CLK is not used.
   - For two-wire ICs (e.g., WS2801, APA102, SK9822): Connect DAT, CLK, VCC, and GND.

   Important: The color of the LED connector wire may not match the color of the controller's labels. Always distinguish GND, DAT, CLK, and VCC based on the LED strip's markings and the controller's labels.

2. **Connect Power Supply:** Connect a DC 5V-24V power supply to the controller's input. Ensure the voltage matches the requirements of your LED strip.
   - Do not use a 12V or 24V power supply for a 5V LED strip.
   - The controller supports a wide voltage range (DC 5V-24V) and will automatically adapt.

Image 4.1: Examples of wiring connections for different types of addressable LED strips.

Image 4.2: Ensure the power supply voltage matches your LED strip's requirements.

4.2. App Installation

The SP108E controller is managed via the "LedShop" mobile application.

1. **Download App:** Search for "LedShop" in the App Store (for IOS) or Google Play Store (for Android), or scan the QR code provided on the controller or in the product packaging.

2. **Compatibility:**
   - IOS version 10.0 or later is required.
   - Android OS version 4.4 or later is required.

Image 4.3: Instructions for downloading the "LedShop" app and a general connection diagram.

5. OPERATING INSTRUCTIONS

The SP108E controller supports two WiFi connection modes: AP Mode and STA Mode.

5.1. AP (Access Point) Mode

In AP Mode, the controller acts as its own WiFi hotspot, allowing your phone to connect directly to it. This mode is suitable for direct control without a router.

1. **Power On:** Power on the SP108E controller.

2. **Connect to Controller WiFi:** On your smartphone, go to WiFi settings. Find and connect to the WiFi network named "SP108E_xxxx" (where xxxx is a unique identifier). The default password is "12345678".

3. **Open LedShop App:** Launch the "LedShop" application. The app should automatically detect and connect to the controller.

4. **Rename Controller (Optional):** You can long-press the connected device in the app to rename it for easier identification.

5.2. STA (Station) Mode

In STA Mode, the controller connects to your existing 2.4G WiFi network, allowing you to control it from anywhere within your network, or even remotely if your router supports it. This mode requires a 2.4G WiFi network; 5G networks are not supported.

1. **Connect via AP Mode First:** Initially, connect your phone to the controller in AP Mode as described above.

2. **Configure STA Mode in App:** Within the "LedShop" app, navigate to the settings or WiFi configuration section. Select your home 2.4G WiFi network from the list and enter its password.

3. **Confirm Connection:** The controller will attempt to connect to your router. Once connected, the controller's WiFi network ("SP108E_xxxx") will disappear, and your phone can reconnect to your home WiFi network. The app will then find the controller on your LAN.

Note: If the device fails to connect to your WiFi network within 20 seconds, it will revert to AP Mode. You may need to repeat the steps.

5.3. App Features and Settings

Once connected, the "LedShop" app provides comprehensive control over your LED lighting:

- **Mode Selection:** Choose from 180 multi-color dynamic modes or 8 single-color dynamic modes.
- **Static Colors:** Access 16 million static color options.
- **Brightness & Speed Adjustment:** Adjust the brightness and speed of dynamic effects.
- **Color Capture:** Use the "from-image-to-effect" function to capture colors from an image and apply them to your LEDs.
- **Pixel & Segment Settings:** Configure the total number of pixels and segments to ensure correct display for your specific LED strip. The controller supports up to 2048 pixels.
- **IC Type Selection:** Select the correct LED driver IC type for your strip (e.g., WS2812B, APA102).
- **Save Settings:** User settings are automatically saved when power is off.

A wide variety of color patterns

✓ 180 multi-color
   dynamic modes
   speed +/-
   brightness +/-

✓ 8 single color dynamic modes
   16 million static colors adjustable
   brightness +/-   speed +/-

✓ From image to effect
   DIY color modes
   speed +/-
   brightness +/-

Image 5.1: Examples of the "LedShop" app interface, demonstrating mode selection, color wheels, and customization options.
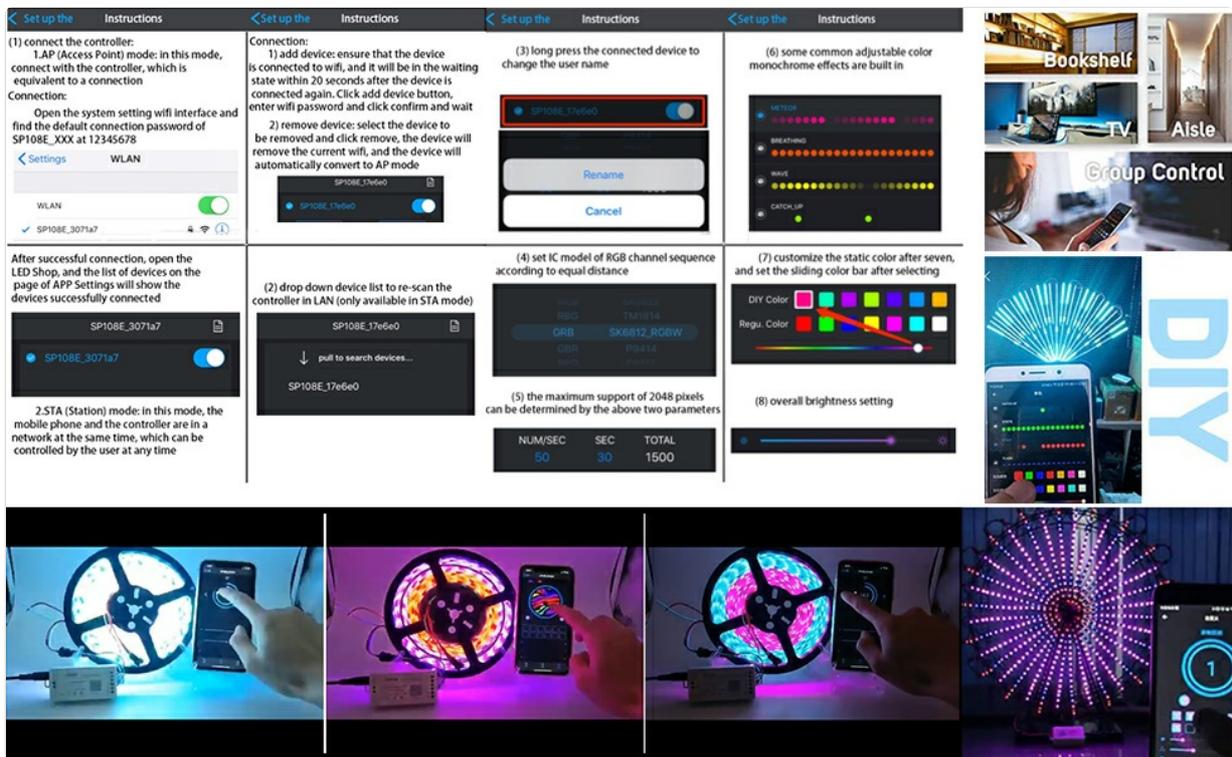
Image 5.2: Comprehensive guide to app usage, including connection modes, settings, and effect customization.

6. Maintenance

- **Cleaning:** Use a dry, soft cloth to clean the controller. Do not use liquid cleaners or aerosols.
- **Environment:** This device is designed for indoor use only. Avoid exposure to moisture, extreme temperatures, and direct sunlight.
- **Connections:** Periodically check all wiring connections to ensure they are secure and free from damage.
- **Firmware Updates:** Check the "LedShop" app or RGBZONE's official website for any available firmware updates for the controller to ensure optimal performance and new features.

7. Troubleshooting

Problem	Possible Cause	Solution
Controller not powering on.	No power supply, incorrect voltage, faulty power supply.	Ensure power supply is connected and functional. Verify voltage matches LED strip requirements (DC 5V-24V).
Cannot connect to controller WiFi (AP Mode).	Incorrect password, controller not in AP mode, 5G WiFi interference.	Default password is "12345678". Power cycle the controller to force AP mode. Ensure your phone is using 2.4G WiFi.
Controller fails to connect to home WiFi (STA Mode).	Incorrect WiFi password, 5G WiFi network, controller too far from router.	Double-check WiFi password. Ensure your router is broadcasting a 2.4G network. Move controller closer to the router.

LEDs not lighting up or displaying incorrect colors/patterns.	Incorrect wiring (DAT, CLK, VCC, GND), wrong IC type selected in app, incorrect pixel count, faulty LED strip.	Verify all wiring connections are correct. Select the exact IC type of your LED strip in the app. Set the correct number of pixels. Test with a known working LED strip if possible.
Controller does not respond to app commands.	No WiFi connection, app not properly synced, controller frozen.	Ensure your phone is connected to the controller (AP Mode) or the same home WiFi network (STA Mode). Close and reopen the app. Power cycle the controller.

8. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the RGBZONE official website or contact their customer service directly. Details are typically available on the product packaging or the brand's online presence.
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