

LOAMLIN SP621E

LOAMLIN SP621E LED Controller User Manual

Model: SP621E

1. INTRODUCTION

Thank you for choosing the LOAMLIN SP621E LED Controller. This device allows you to control compatible LED strips with ease, offering features like Bluetooth app control, music synchronization, and various lighting effects. This manual provides essential information for setting up, operating, and maintaining your controller to ensure optimal performance.

2. PRODUCT OVERVIEW

The LOAMLIN SP621E is a versatile LED controller designed for individually addressable LED strips. It features a compact design with a USB input for power and a 3-pin connector for LED strip connection.

Key Features:

- **App Control:** Manage your LED lighting via a dedicated iOS/Android application.
- **Music Synchronization:** Lights can react to music played through your phone's microphone or music player.
- **Extensive Effects:** Choose from 18 music modes and 142 light effects.
- **Timer Function:** Schedule your lights to turn on or off automatically.
- **Adjustable Brightness & Color:** Customize your lighting experience.
- **USB Power Input:** Convenient power supply via USB.

Compatibility:

The SP621E controller supports:

- 5V WS2812B LED strips and strings.
- 12V/24V WS2811 LED strips and strings.

Important: This controller **cannot** control standard RGB LED lights that do not have an integrated IC driver (e.g., WS2812B or WS2811).

Unterstützte LED-Leuchten



Image 2.1: Examples of supported LED light types, including WS2812B LED strips, fairy lights, chains, and rings.

3. SETUP INSTRUCTIONS

Follow these steps to correctly set up your LOAMLIN SP621E LED Controller.

3.1 Package Contents:

- LOAMLIN SP621E LED Controller (with USB cable and 3-pin connector)

3.2 Connection Diagram:

1. **Connect LED Strip:** Plug the 3-pin connector from the SP621E controller into the corresponding 3-pin input on your compatible LED light strip. Ensure the pins align correctly (Data, Ground, Power).
2. **Connect Power:** Insert the USB plug of the controller into a 5V USB power source (e.g., a USB wall adapter, power bank, or computer USB port).

LED SPI CONTROLLER

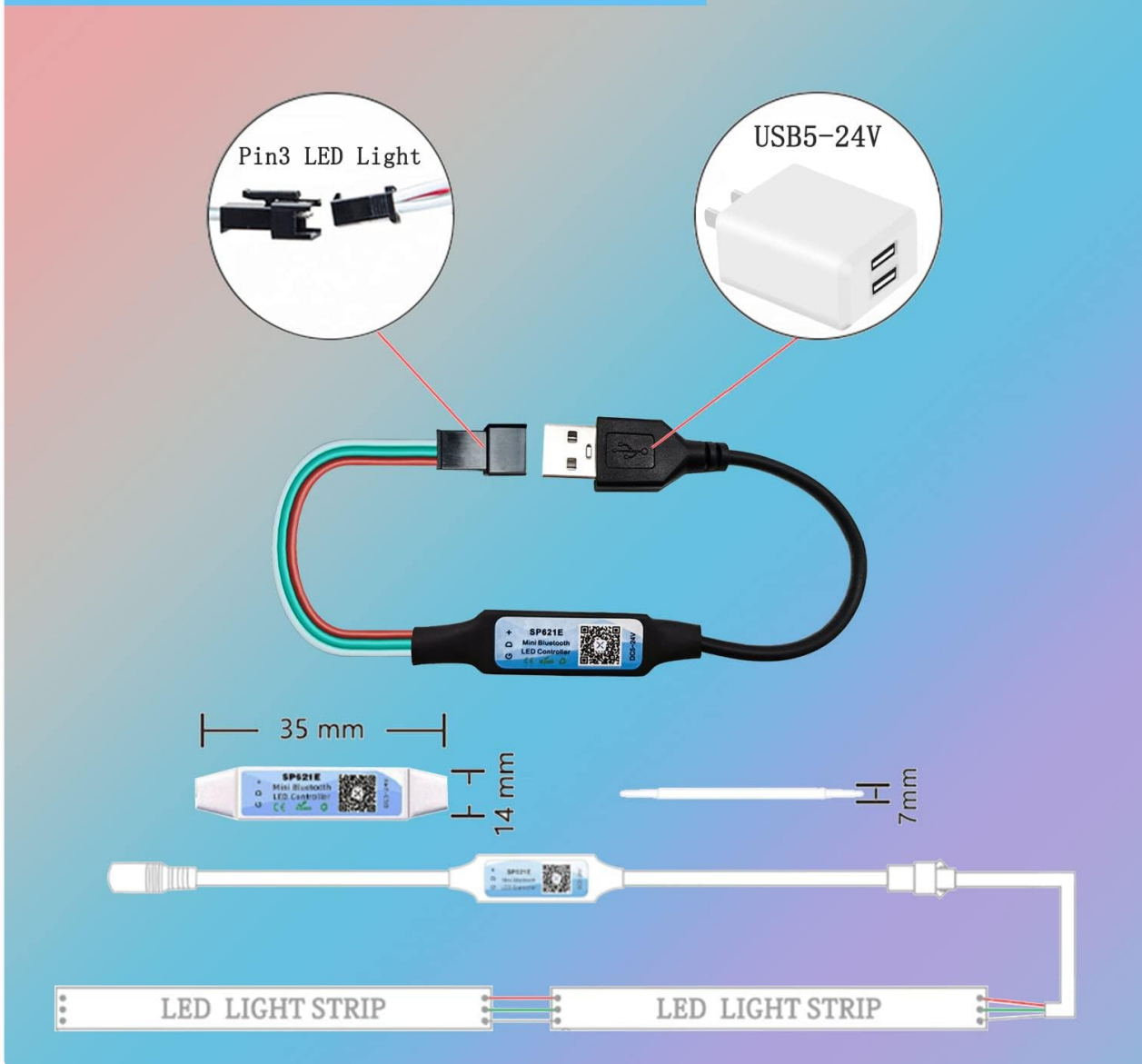


Image 3.1: Detailed connection diagram showing the SP621E controller, USB power input, and 3-pin LED light strip connection.

3.3 Power Supply Considerations:

The SP621E controller can manage up to 600 pixels. However, for optimal performance and to prevent issues like freezing or loss of control, it is strongly recommended to add a separate 5V power supply for every 300 LEDs in your strip. Insufficient power can lead to unstable operation and Bluetooth connectivity problems.

3.4 App Installation:

1. **Scan QR Code:** Locate the QR code printed on the SP621E controller. Use your smartphone's camera or a QR code scanner app to scan it.
2. **Download App:** The QR code will direct you to download the official control application for iOS or Android devices. Follow the on-screen instructions to install the app.

3.5 Bluetooth Pairing:

1. Ensure your SP621E controller is powered on and your LED strip is connected.
2. Enable Bluetooth on your smartphone.

3. Open the installed control application. The app should automatically detect and connect to the SP621E controller. If not, navigate to the device list within the app and select your controller.

4. OPERATING INSTRUCTIONS

Once connected, use the mobile application to control your LED lights.



Image 4.1: Icons representing the app's control features: Grouping, App control, Bluetooth, Music, and Timer.

4.1 App Interface Navigation:

The app provides an intuitive interface to manage your lighting. Explore the various sections for effects, music modes, and settings.

4.2 Mode Selection:

- **Music Modes:** Select from 18 pre-programmed music modes that synchronize light patterns with audio input.
- **Light Effects:** Choose from 142 static or dynamic light effects to create different atmospheres.

4.3 Color and Brightness Adjustment:

Within the app, you can easily adjust the brightness level and select your preferred colors from a palette or color wheel. Some effects may allow for dynamic color changes.

4.4 Music Control:

Activate the music control feature to have your LED lights respond to sound. The app can utilize your phone's microphone to pick up ambient music or integrate with your device's music player.

4.5 Timer Function:

Set schedules for your LED lights to automatically turn on or off at specific times. This feature is useful for daily routines or energy saving.

4.6 Color Calibration:

If the colors displayed in the app do not accurately match the colors produced by your LED strip, use the app's color calibration feature. Follow the in-app instructions to adjust and synchronize the color output.

5. MAINTENANCE

To ensure the longevity and proper functioning of your LOAMLIN SP621E LED Controller, follow these simple maintenance guidelines:

- **Keep Dry:** Protect the controller from moisture and liquids. It is not waterproof.
- **Clean Gently:** If cleaning is necessary, use a dry, soft cloth. Avoid harsh chemicals or abrasive materials.
- **Adequate Ventilation:** Ensure the controller is placed in an area with sufficient airflow to prevent overheating, especially during prolonged use.
- **Power Supply:** Always use a stable 5V USB power source. Avoid using power supplies that are unstable or provide insufficient current, as this can damage the controller or LED strip.

6. TROUBLESHOOTING

If you encounter issues with your LOAMLIN SP621E LED Controller, refer to the following common problems and solutions:

Problem: Controller unresponsive, LED strip color freezes, or Bluetooth connection fails.

Possible Cause: Insufficient power supply to the LED strip or controller.

Solution: Ensure your 5V USB power source provides adequate current. For LED strips longer than 300 LEDs, it is highly recommended to inject additional 5V power every 300 LEDs to prevent voltage drop and ensure stable operation.

Problem: LED strip colors do not match the colors displayed in the app.

Possible Cause: Color calibration is required.

Solution: Use the color calibration feature within the control application to synchronize the app's color output with the physical LED strip's colors.

Problem: Cannot connect to the controller via Bluetooth.

Possible Causes:

- Bluetooth is disabled on your phone.
- Controller is not powered on.
- Interference from other Bluetooth devices.
- App is not functioning correctly.

Solutions:

- Ensure Bluetooth is enabled on your smartphone.
- Verify the controller is powered on and receiving sufficient power.
- Try restarting the app and your phone's Bluetooth.
- Move closer to the controller to ensure a strong Bluetooth signal.
- Temporarily disable other Bluetooth devices nearby.

Problem: LED strip is not lighting up.

Possible Causes:

- No power to the controller.
- Incorrect connection of the LED strip.
- Incompatible LED strip.
- Faulty LED strip or controller.

Solutions:

- Check the USB power connection and ensure the controller's indicator light (if present) is on.
- Verify the 3-pin connector is securely and correctly plugged into the LED strip.
- Confirm your LED strip is a compatible WS2812B (5V) or WS2811 (12V/24V) type.
- Test with a different compatible LED strip or power source if available to isolate the issue.

7. SPECIFICATIONS

Feature	Specification
Brand	LOAMLIN
Model Number	SP621E
Input Voltage	5 Volts (DC)
Compatible LED ICs	WS2812B (5V), WS2811 (12V/24V)
Max Pixels Controlled	600 pixels (with recommended power injection)
Control Method	Bluetooth App (iOS/Android)
Special Features	Individually addressable, Music control, USB input, Timer, DIY project
Material	Copper

Item Weight	10 g
Average Lifespan	50000 Hours
Included Components	Bluetooth LED Controller 3-pin
Batteries Required	No
Date First Available	February 14, 2023

8. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the retailer where you purchased the LOAMLIN SP621E LED Controller. Information regarding spare parts availability and guaranteed software updates is currently unavailable.