BTF-LIGHTING SP602E

BTF-LIGHTING SP602E Bluetooth LED Controller User Manual

INTRODUCTION

This manual provides instructions for the setup, operation, and maintenance of the BTF-LIGHTING SP602E Bluetooth LED Controller. This controller is designed for use with addressable LED module pixel strips and string lights, supporting various IC types including WS2812B, WS2811, WS2813, WS2815, and UCS1903.

PRODUCT OVERVIEW

The SP602E is a versatile LED controller offering multiple control methods and advanced features for dynamic lighting effects.

This image shows the compact design of the BTF-LIGHTING SP602E Bluetooth LED Controller.

KEY FEATURES

- **4 Independent Output Ports:** Each port can control up to 600 pixels, allowing for a total of 2400 pixels. Outputs work independently, ensuring diverse lighting effects without interference.

- **Wide IC Compatibility:** Supports FCOB RGB WS2811, WS2812B, WS2811, WS2813, WS2815, and UCS1903 IC types.

- **Dual Control Methods:** Manage your lighting via the dedicated Android/iOS APP (Banlan X) or the included RF Remote.

- **Timer Function:** Set up to 5 daily timers to automate LED strip activation and deactivation with selected lighting effects.

- **Trigger Control:** Features 4 triggers for advanced applications, such as synchronizing with automotive signals (turn, brake, reverse lights).

- **Group Control:** Organize and control multiple controllers (up to 5 devices per group) for synchronized lighting across larger installations.

- **Customizable Colors:** Access 16 million monochrome effects and fine-tune colors manually within the app.
- **Color Calibration:** Adjust colors in the app to ensure they accurately match the LED strip's output.
- **Extensive Effects:** Includes 142 dynamic effects and 18 music-reactive effects.

PACKAGE CONTENTS

- 1 x BTF-LIGHTING SP602E Bluetooth Controller
- 1 x RF Remote

SETUP AND WIRING

Ensure all power is disconnected before wiring. The controller operates on DC5V-24V. The input voltage must match the voltage requirements of your LED strip.

Wiring Diagram

This diagram illustrates how to connect the SP602E controller to a power supply and multiple LED strips. Connect VCC from the power supply to the controller's VCC and the LED strips' VCC. Connect GND from the power supply to the controller's GND and the LED strips' GND. Connect the data lines (DAT1, DAT2, DAT3, DAT4) from the controller to the respective data input of each LED strip.

Power Supply Considerations

Insufficient power supply can lead to controller malfunction, frozen LED strip colors, remote unresponsiveness, and Bluetooth disconnection. Always ensure your power supply meets the wattage requirements for your LED setup.

- For 1 color (red, green, blue, or pure white): approximately 0.1W per LED.
- For 2 colors (e.g., red + green): approximately 0.2W per LED.
- For 3 colors (red + green + blue = mixed white): approximately 0.3W per LED.

It is not recommended to operate the LED strips at full brightness white light for extended periods, as addressable

RGB IC light strips are primarily designed for chasing rainbow effects.

OPERATING INSTRUCTIONS

The SP602E controller can be operated using the dedicated mobile application or the included RF remote control.

This image demonstrates the two primary control methods: RF Remote Control and APP Control, allowing users to manage their LED lighting.

App Control (Banlan X)

Download the "Banlan X" app from the App Store (iOS) or Google Play (Android), or scan the QR code provided on the controller for direct access.

This image displays various screens of the Banlan X app, including timer configuration, color selection, and effect adjustments.

Dynamic and Music Effects

The app offers 142 dynamic effects and 18 music-reactive effects. Select from options like rainbow, twinkle star, fire, stacking, comet, wave, chasing, gradient, wiping, breathing, rhythm spectrum, beat ejection, pulse, and ripple.

Multiple Colors Optional

- 142 kinds of Dynamic effects
- 18 kinds of Music effects
- Supports multiple groups of control

This image highlights the variety of dynamic and music effects available through the controller, such as rainbow, twinkle star, fire, and wave.

This image illustrates the music sync mode, where LED lights react to sound, enhancing the ambiance.

Customized Color

You can manually select precise colors using the RGB color properties within the app, creating up to 16 million monochrome effects.

Color Calibration

If the app's color display does not match the LED strip's output (e.g., green appears blue), use the app's color calibration feature to correct it.
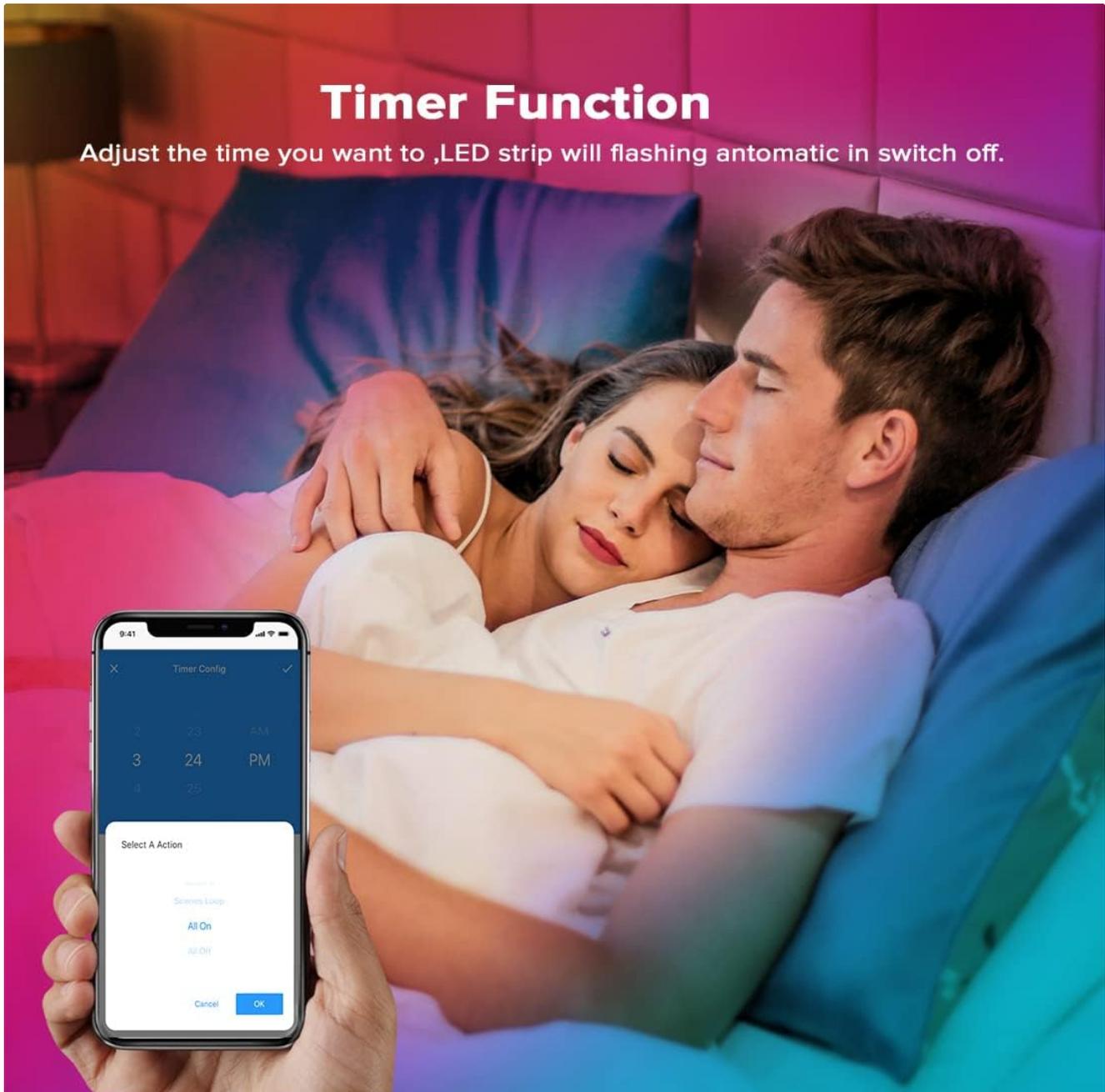
RF Remote Control

The included RF remote provides basic control over the LED strips, allowing for quick adjustments without needing the mobile app.

ADVANCED FUNCTIONS

Timer Function

Set up to 5 timers to automatically turn the LED strip on or off at specific times each day. You can select various lighting effects for the timed activation. Note: The controller must remain powered for timer settings to be retained; disconnecting power will clear alarm clock records.

This image shows the timer configuration screen within the mobile app, allowing users to schedule when their LED strips turn on or off.

Trigger Control

The controller supports up to 4 triggers, useful for automotive LED projects. Each trigger can control one or more outputs, allowing synchronization with vehicle signals like turn, brake, and reverse lights. Note: Triggers are not included in the standard packing list.

Group Control

Create multiple groups, with each group capable of controlling up to 5 devices. This feature allows for synchronized lighting effects across several controllers, making complex projects easier to manage.

Troubleshooting

LED Strip Not Responding or Freezing

- **Power Supply:** Insufficient power is a common cause for loss of control, frozen colors, and remote/Bluetooth issues. Ensure your power supply meets the wattage requirements for your LED setup (approximately 0.1W/LED for 1 color, 0.2W/LED for 2 colors, 0.3W/LED for 3 colors).
- **Wiring:** Verify all wiring connections are secure and correct according to the wiring diagram in the Setup section.

App Disconnection

- Ensure the controller has adequate power.
- Restart the Banlan X app and attempt to reconnect.
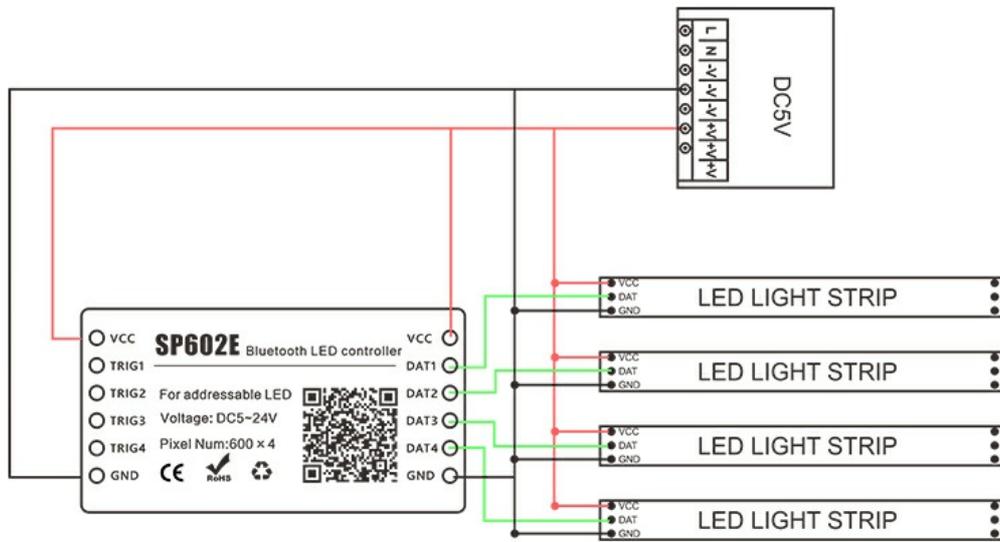- Confirm that Bluetooth is enabled on your mobile device.

Inconsistent Colors

- Use the color calibration feature within the Banlan X app to adjust the color output to match the app's display.

SPECIFICATIONS

Feature	Detail
Model Number	SP602E
Control Method	APP (Bluetooth), RF Remote
Output Ports	4 independent signal outputs
Max Pixels per Port	600 pixels
Total Max Pixels	2400 pixels
Supported IC Types	WS2812B, WS2811, WS2813, WS2815, UCS1903, FCOB RGB WS2811
Input Voltage	DC5V-24V (matches LED strip voltage)
Special Features	Timer, Trigger Control, Group Control, Color Calibration
Material	Plastic
Item Weight	1.6 ounces

How to connect SP602E controller and LED strip?

This table provides a comparison of various BTF-LIGHTING LED controller models, highlighting differences in control methods, pixel quantity, supported ICs, and features.

WARRANTY AND SUPPORT

For warranty information or technical support, please contact BTF-LIGHTING customer service through your purchase platform or the official BTF-LIGHTING website. Please retain your proof of purchase for warranty claims.