

BTF-LIGHTING SP601E

BTF-LIGHTING SP601E Bluetooth LED Controller User Manual

Model: SP601E | Brand: BTF-LIGHTING

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your BTF-LIGHTING SP601E Bluetooth LED Controller. This controller is designed for use with addressable LED pixel strip lights such as WS2812B, WS2811, and 1903 types, offering dual signal output, music synchronization via a built-in microphone, and versatile control options.

2. SAFETY INFORMATION

- Ensure the power supply voltage matches the working voltage of your LED lights (DC5V-24V). Using an incorrect voltage can damage the LED lights.
- Do not use a 12V or 24V power supply for 5V LED strips.
- Avoid lighting up full brightness white light for extended periods, as addressable RGB IC light strips are primarily designed for dynamic chasing effects.
- Insufficient power supply can lead to controller malfunction, frozen colors, unresponsive remote control, and Bluetooth disconnection. Ensure adequate power for your LED project.
- This device is intended for indoor use only.

3. PRODUCT OVERVIEW

The BTF-LIGHTING SP601E is a versatile LED controller offering multiple control methods and advanced features for dynamic lighting effects.

3.1. Key Features

- **Dual Signal Output Ports:** Two independent output ports, each controlling up to 600 pixels (total 1200 pixels). Effects on one port do not impact the other.
- **Built-in Microphone:** Captures ambient sound for music-synchronized lighting effects. Sensitivity is fixed.

- **Multiple Control Methods:** Control via Android/iOS app ("Banlan X" or "SceneX"), RF remote control, or integrated 3-key buttons on the controller.
- **Dynamic Effects:** 12 music lighting effects, 24 special effects, and 16 million monochrome options. Adjustable speed, brightness, and channel order.
- **Timing Function:** Set up to 5 timers for automated light strip operation.
- **Group Function:** Control up to 5 devices within one group.
- **Memory Function:** Retains settings in case of power-down.
- **Color Calibration:** Adjust app color to match LED strip output.

3.2. Package Contents

- BTF-LIGHTING SP601E Bluetooth LED Controller
- RF Remote Controller

3.3. Controller and Remote Layout



Figure 1: SP601E Controller Layout. This image displays the BTF-LIGHTING SP601E controller with its dimensions (150.00mm cable length, 41.90mm width, 16.18mm height) and button functions: Speed (S), ON/OFF (Power), and Mode (M). It also shows the 5.5x2.1mm DC male plug connection.



Figure 2: RF Remote Control Functions. This image illustrates the buttons on the RF remote control: ON/OFF, Lock/Unlock (press 5 seconds to lock), Brightness +/-, Speed +/-, Scene Auto, and 9 numbered scene buttons (1-9).

4. SETUP

4.1. Hardware Connection

1. **Connect LED Strips:** Connect your compatible LED pixel strip lights (WS2812B, WS2811, 1903) to the dual signal output ports of the SP601E controller. Ensure correct polarity. The controller supports two independent channels.
2. **Connect Power Supply:** Connect a DC5V-24V power supply (5.5mm x 2.1mm DC connector) to the controller. The voltage of the power supply must match the operating voltage of your LED strips.
***Important:** If your LED light is 5V, use a 5V power supply. Never use 12V or 24V power with 5V LED lights to prevent damage.*
3. **Power On:** Plug the power supply into a wall outlet. The LED strips should illuminate.



Figure 3: Hardware Connection Diagram. This diagram illustrates how to connect the SP601E controller to two LED strips and a DC power supply, which is then plugged into a wall outlet. It highlights the dual signal output and the power input.

Your browser does not support the video tag.

Video 1: SP601E Music Controller Setup. This video demonstrates the physical connection of the SP601E controller to LED strips

and a power source, showing the initial setup and basic functionality of the lighting.

4.2. App Installation and Connection

1. **Download App:** Search for "Banlan X" or "SceneX" in the App Store (iOS) or Google Play Store (Android), or scan the QR code provided on the product packaging or in Figure 4.
Alternatively, you can visit <https://download.ledhue.com/page/scenex/> for app download links.
2. **Enable Bluetooth:** Ensure Bluetooth is enabled on your smartphone.
3. **Open App and Connect:** Open the "Banlan X" or "SceneX" app. The app will search for the controller's Bluetooth signal. Select "SP601E" from the list of available devices to connect.

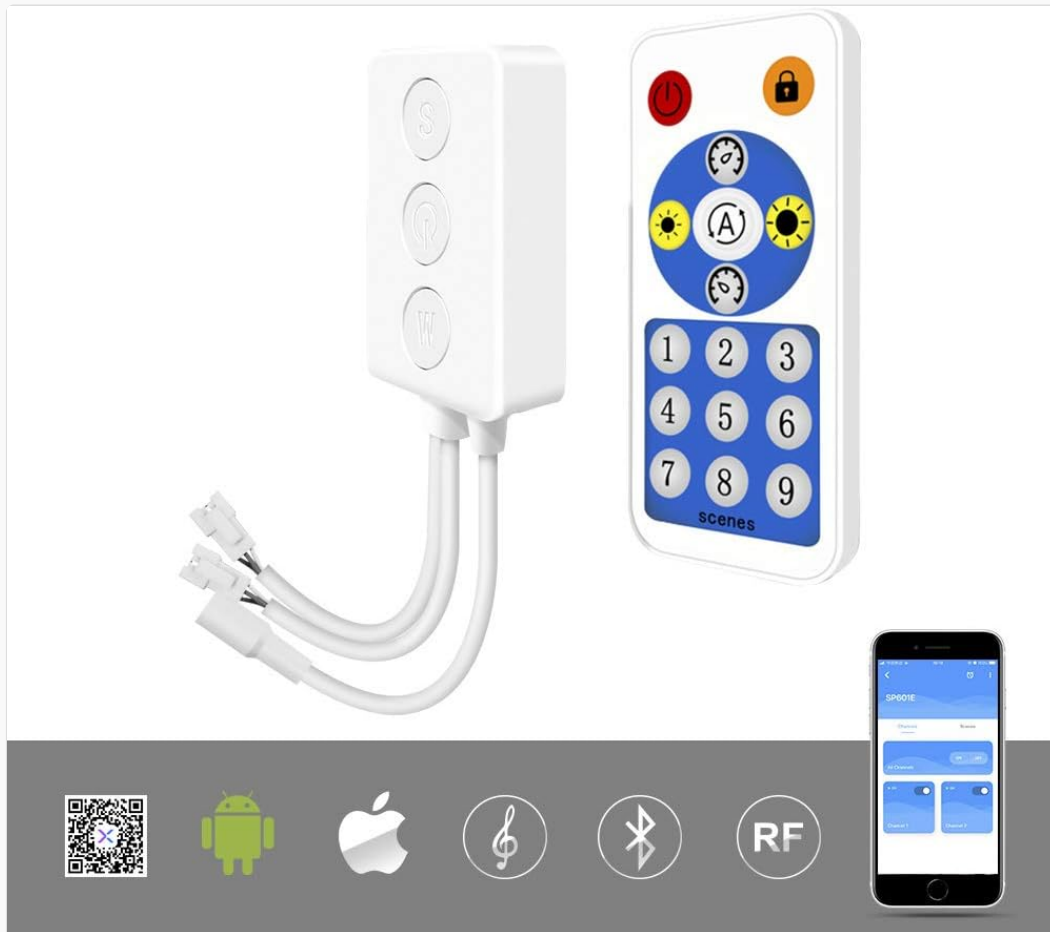


Figure 4: Controller, Remote, and App Overview. This image shows the SP601E controller, its RF remote, and icons indicating compatibility with Android and iOS apps (FairyNest X, SceneX, LED Hue). A QR code for app download is also visible.

Your browser does not support the video tag.

Video 2: SP601E/SP608E Controller App Control. This video demonstrates the process of connecting the controller via the app and adjusting various lighting parameters, including dynamic effects, static colors, and sensitivity settings.

5. OPERATING INSTRUCTIONS

5.1. App Control (Banlan X / SceneX)

Once connected, the app provides comprehensive control over your LED strips.

- **Channel Control:** Turn individual channels (Channel 1, Channel 2) or all channels ON/OFF.
- **Dynamic Effects:** Select from 12 music lighting effects and 24 special effects. Adjust speed, brightness, and effect length.

- **Static Color Adjustment:** Choose from 16 million colors. Adjust hue and saturation for precise color selection.
- **Microphone Sensitivity:** The built-in microphone's sensitivity for music modes is fixed and cannot be adjusted via the app.
- **Save Scenes:** Save your preferred lighting effects to groups or select pre-defined group effects.

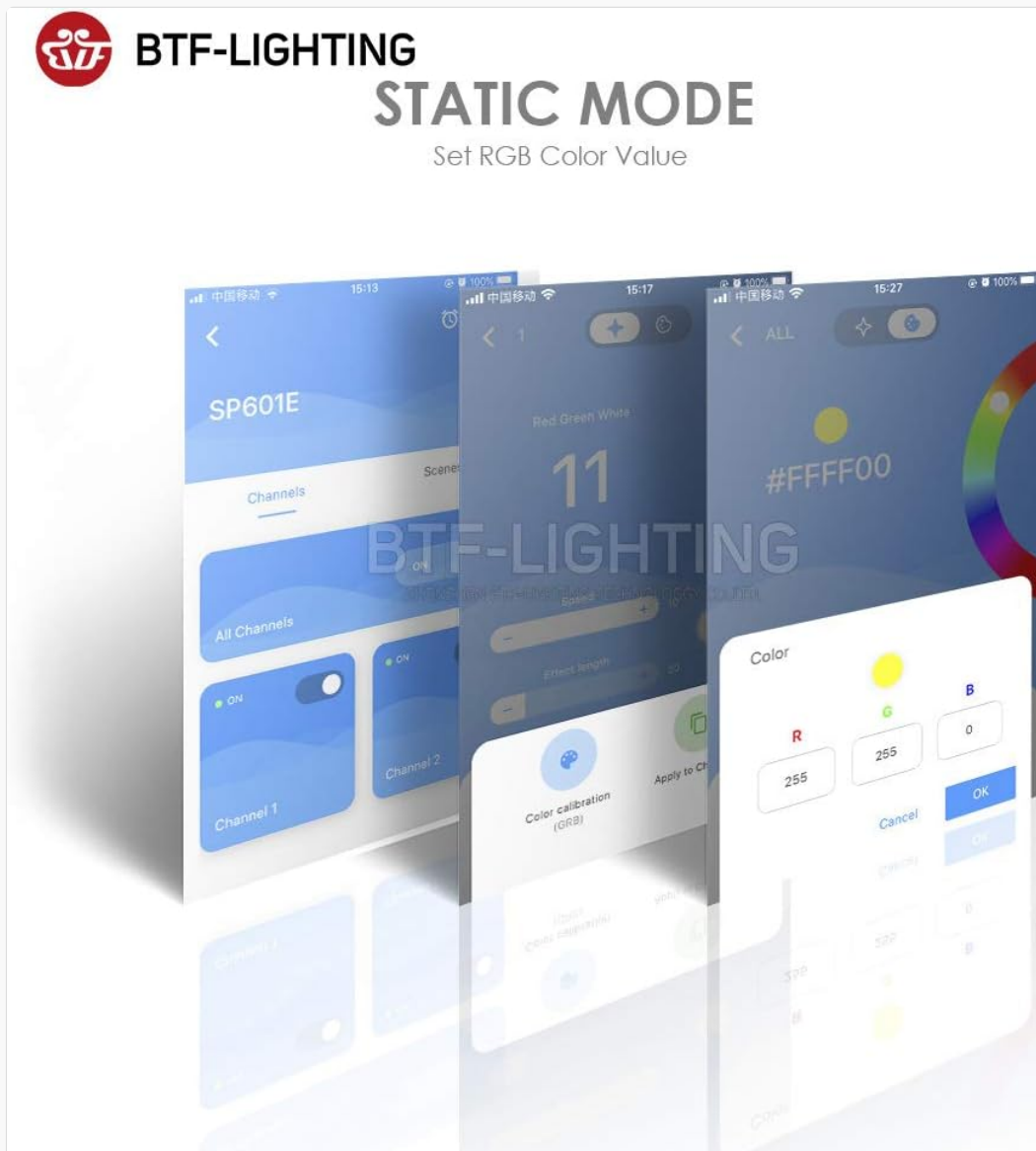


Figure 5: App Static Mode Control. This image displays app screenshots demonstrating how to adjust static light colors, including hue and saturation, and how to set RGB color values.



BTF-LIGHTING

Support Timer function

Adjust the time you want to ,led strip will flashing automatic in switch off.



Figure 6: App Timer Function. This image shows an app screenshot highlighting the timer function, allowing users to schedule when the LED strip will automatically switch on or off with selected lighting effects.

5.2. Controller Button Control

The controller features three physical buttons for basic operation:

- **Power Button:** Turns the controller and connected LED strips ON/OFF.
- **Mode Button (M):** Cycles through different lighting modes/effects.
- **Speed Button (S):** Adjusts the speed of dynamic lighting effects.

5.3. RF Remote Control

The included RF remote provides convenient wireless control.

- **ON/OFF:** Power button to turn lights on or off.
- **Lock/Unlock:** Press for 5 seconds to lock the remote.
- **Brightness:** Adjust the overall brightness of the lights.
- **Speed:** Adjust the speed of dynamic effects.
- **Scene Auto:** Cycles through pre-programmed scenes automatically.
- **Scene Buttons (1-9):** Directly select specific lighting scenes.

5.4. Color Calibration

If the colors displayed in the app do not match the actual output of your LED strip, use the color calibration feature

within the app to synchronize them.

6. MAINTENANCE

- Keep the controller and remote clean and dry.
- Avoid exposing the device to extreme temperatures or humidity.
- Do not attempt to open or repair the controller yourself, as this will void the warranty.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Controller loses control, colors frozen, remote unresponsive, Bluetooth disconnected.	Insufficient power supply.	Ensure your power supply provides adequate wattage for your LED strips. If the LED strip is progressively darker at the end, add voltage to the strip.
App color inconsistent with LED strip color.	Color calibration needed.	Use the color calibration function within the app to adjust.
LED strip effect is stuck or not changing.	Controller freezing or power issue.	Disconnect and reconnect power to the controller. Verify power supply adequacy.
Cannot connect to the app via Bluetooth.	Bluetooth not enabled, app issue, or controller not discoverable.	Ensure Bluetooth is on. Close and reopen the app. Restart the controller.

8. SPECIFICATIONS

- **Model:** SP601E
- **Brand:** BTF-LIGHTING
- **Input Voltage:** DC5V-24V (via 5.5mm x 2.1mm DC power jack)
- **Control Pixel Quantity:** Max 600 pixels per port, 1200 pixels total (two ports)
- **Supported ICs:** SPI (TTL) Digital Signal WS2811, WS2812B, 1903, 16703 (Except SK6812 RGBW)
- **Control Methods:** RF remote control, Bluetooth app control (Android/iOS), 3-key button control
- **Music Mode:** Built-in microphone (fixed sensitivity)
- **Lighting Effects:** 12 music effects, 24 special effects, 16 million monochrome colors
- **Dimensions:** 4 x 2.3 x 1.1 inches (Controller)
- **Item Weight:** 2.11 ounces (0.06 Kilograms)
- **Indoor/Outdoor Usage:** Indoor use only
- **Included Components:** RF remote controller

9. SUPPORT AND WARRANTY

For technical assistance or questions regarding power supply compatibility for your LED project, please contact BTF-LIGHTING customer support. Refer to your product packaging or the official BTF-LIGHTING website for contact information.

This product comes with a standard manufacturer's warranty. Please retain your proof of purchase for warranty claims. Any unauthorized modification or improper use of the device will void the warranty.

Related Documents - SP601E

<div>Multilingual Index</div> <div>English P.01</div> <div>Deutsch P.11</div> <div>Español P.20</div> <div>Français P.29</div> <div>Italiano P.38</div> <div>日本語 P.47</div> <div>Nederlands P.57</div>	<div>BTF-LIGHTING WS2812B/WS2812B ECO RGB LED Strip User Manual</div> <div>User manual for BTF-LIGHTING WS2812B and WS2812B ECO individually addressable RGB LED strips. Covers product parameters, precautions, installation, and recommended accessories.</div>
<div>Multilingual Index</div> <div>English P.1</div> <div>Deutsch P.11</div> <div>Español P.21</div> <div>Français P.31</div> <div>Italiano P.41</div> <div>Nederlands P.51</div> <div>日本語 P.61</div>	<div>BTF-LIGHTING WS2811 IC RGB LED Strip User Manual - Installation & Specifications</div> <div>Comprehensive user manual for the BTF-LIGHTING WS2811 IC RGB LED Strip. Covers product specifications, installation guides, wiring diagrams, precautions, and recommended accessories for addressable RGB LED lighting.</div>
<div>Multilingual Index</div> <div>English P.01</div> <div>Deutsch P.14</div> <div>Español P.26</div> <div>Français P.38</div> <div>Italiano P.50</div> <div>日本語 P.62</div> <div>Nederlands P.74</div>	<div>BTF-LIGHTING FCOB WS2812B SPI RGB IC LED Strip User Manual</div> <div>User manual for the BTF-LIGHTING FCOB WS2812B SPI RGB IC LED Strip, detailing product parameters, installation, precautions, and controller compatibility for optimal lighting setups.</div>
<div>Multilingual Index</div> <div>English P.01</div> <div>Deutsch P.12</div> <div>Español P.22</div> <div>Français P.32</div> <div>Italiano P.42</div> <div>Nederlands P.52</div>	<div>BTF-LIGHTING SPI Single Color LED Strip User Manual (SMD-FCOB-DIMIC-01-EN)</div> <div>Comprehensive user manual for the BTF-LIGHTING SPI Single Color LED Strip (SMD-FCOB-DIMIC-01-EN). Covers product specifications, installation, precautions, connection diagrams, controller/power supply compatibility, and thermal management. Available in multiple languages.</div>
<div>Multilingual Index</div> <div>English P.1</div> <div>Deutsch P.11</div> <div>Español P.21</div> <div>Français P.31</div> <div>Italiano P.41</div> <div>日本語 P.51</div> <div>Nederlands P.61</div>	<div>BTF-LIGHTING FCOB SPI RGB IC LED Strip User Manual</div> <div>User manual for the BTF-LIGHTING FCOB SPI RGB IC LED Strip, detailing product specifications, installation, and usage. Features addressable RGB lighting with WS2811 IC for dynamic lighting effects.</div>

<div><div>Multilingual Index</div><div><div>English----- P.1</div><div>Deutsch----- P.10</div><div>Español----- P.19</div><div>Français----- P.28</div><div>Italiano----- P.37</div><div>Nederlands----- P.46</div></div></div>	<div><div>BTF-LIGHTING FCOB SPI RGBCCT LED Strip User Manual</div><div>User manual for the BTF-LIGHTING FCOB SPI RGBCCT LED Strip, detailing product specifications, installation, precautions, and recommended accessories.</div></div>
---	--