GLEDOPTO GL-C-201P

GLEDOPTO ZigBee 3.0 Pro+ 5 in 1 LED Strip Controller GL-C-201P User Manual

Model: GL-C-201P

1. Introduction

The GLEDOPTO ZigBee 3.0 Pro+ 5 in 1 LED Strip Controller (Model GL-C-201P) is designed for intelligent control of various LED strip types, including RGBCCT, RGBW, RGB, CCT, and Dimmer. This controller utilizes the ZigBee 3.0 protocol, ensuring compatibility with a wide range of ZigBee hubs and smart home systems. It offers enhanced stability, extended connection distance, and reduced standby power consumption. This manual provides detailed instructions for installation, operation, and troubleshooting to ensure optimal performance of your LED strip controller.

2. Safety Information

Please read all safety warnings carefully before installation and operation.

- Before powering on the device, ensure all connections are correct and secure. Do not work on the device while it is powered on.
- The device should only be operated with its rated voltage (DC12V-24V). Using excessively high or low voltage can cause damage.
- Do not disassemble the device, as this may lead to fires and electric shocks.
- Do not use the product in environments exposed to direct sunlight, moisture, or high temperatures.
- Do not use the product in metal-shielded areas or near strong magnetic fields, as this can severely impair the product's wireless signal transmission.

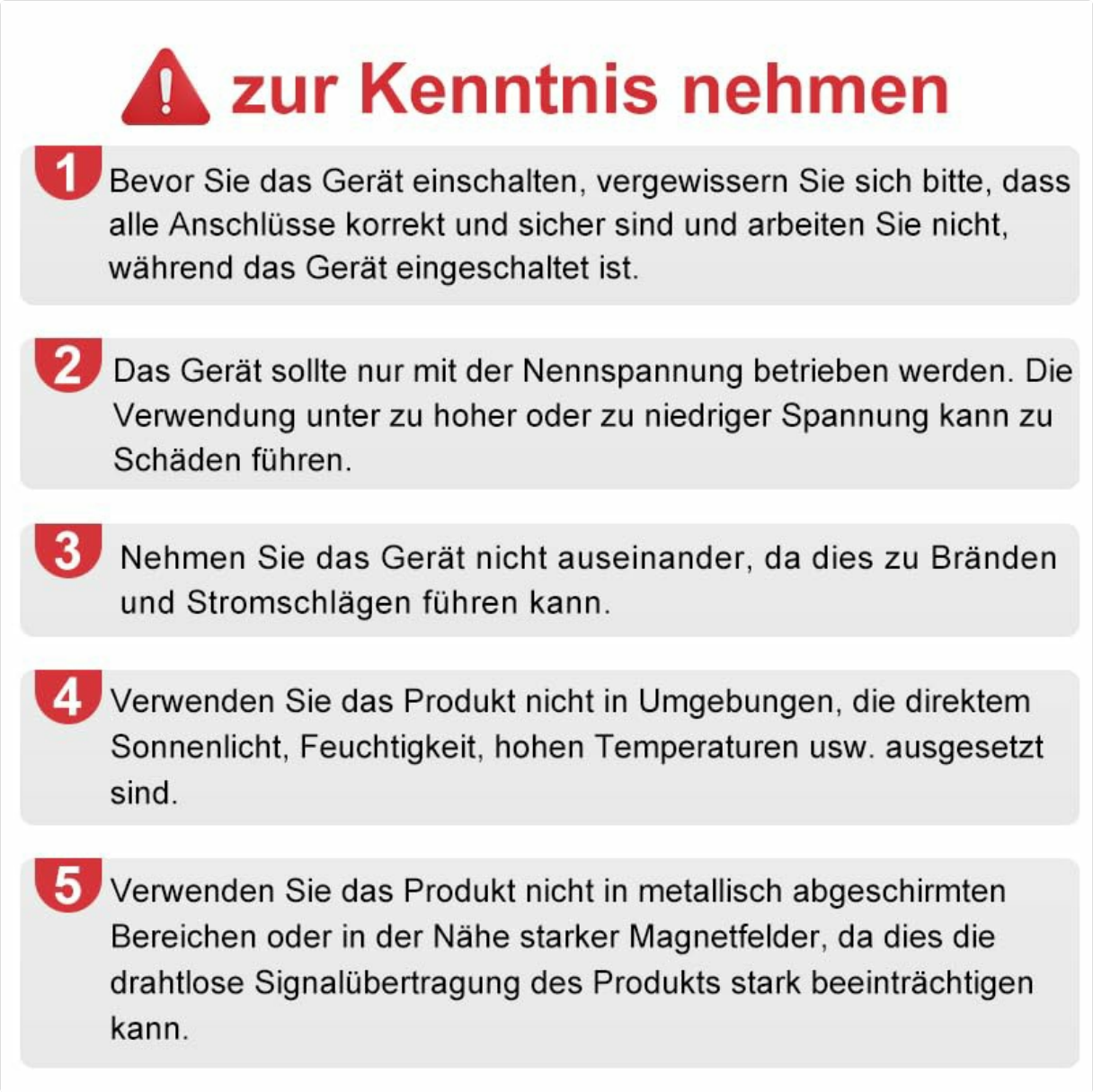


Image 2.1: Safety warnings for the LED controller.

This image displays important safety warnings regarding the use and handling of the LED controller, emphasizing correct connections, voltage requirements, and environmental considerations.

3. Product Features

- **ZigBee 3.0 Protocol:** Compatible with general ZigBee bridges and coordinators, offering stable and convenient connection.
- **5-in-1 Functionality:** Supports RGBCCT, RGBW, RGB, CCT, and Dimmer LED strip configurations.
- **Extended Range:** Increases connection distance up to 31 meters and functions as a signal repeater to expand network coverage.
- **Low Power Consumption:** Reduces standby power consumption for energy efficiency.
- **Power-on Status Settings:** Configurable default state (light on or off) after power restoration.
- **Selectable Frequency:** Adjustable PWM frequency (600Hz, 800Hz, 1000Hz, 2000Hz, 4000Hz, 8000Hz) to match different power supplies and reduce noise.
- **Smart Control:** Compatible with ZigBee hubs for app control (e.g., Tuya Smart, SmartThings) and voice control via Amazon Alexa or Google Home.
- **Wide Voltage Input:** Operates with DC12V-24V power supplies.

- **High Output Current:** Supports a total output current of 20A Max, with 15A Max per channel, suitable for longer LED strips.

4. Package Contents

Please verify that all items are present in the package:

- 1 x GLEDOPTO ZigBee Pro+ LED Strip Controller (GL-C-201P)
- 1 x User Manual
- 1 x 3cm Sticker

5. Specifications

Specification	Value
Product Name	ZigBee Pro+ 5 in 1 LED Strip Controller
Model No.	GL-C-201P
Input Voltage	DC12V-24V
Total Output Current	20A Max
Max Current/Channel	15A Max
Operating Temperature	-20°C to 45°C
Dimensions	108 x 45 x 18 mm
International Protection Rating	IP20
Operation Mode	Automatic
Connector Type	Plug In
Circuit Type	Parallel
Actuator Type	Push Button
Contact Material	Metal

6. Setup Instructions

Follow these steps to set up your GLEDOPTO ZigBee LED Strip Controller:

1. **Step 1: Power Your Light Sources**
   Connect the LED strip to the controller's output terminals (V+, R, G, B, W, C). Ensure the correct wiring for your specific LED strip type (RGBCCT, RGBW, RGB, CCT, or Dimmer). Connect the power adapter to the controller's input (V+, V-). Plug in the power adapter to an electrical outlet.

Image 6.1: GLEDOPTO LED Strip Controller showing input and output terminals with wiring diagram.

This image illustrates the physical layout of the controller, including input and output terminals, indicator light, and control buttons. It also shows a diagram for connecting different types of LED strips.

Image 6.2: The LED controller integrated into a living room environment, highlighting its quick connect port and maximum output current.

This image shows the controller in a typical installation scenario, emphasizing the quick connect port for easy wiring and its capability to handle a total output current of 20A Max.

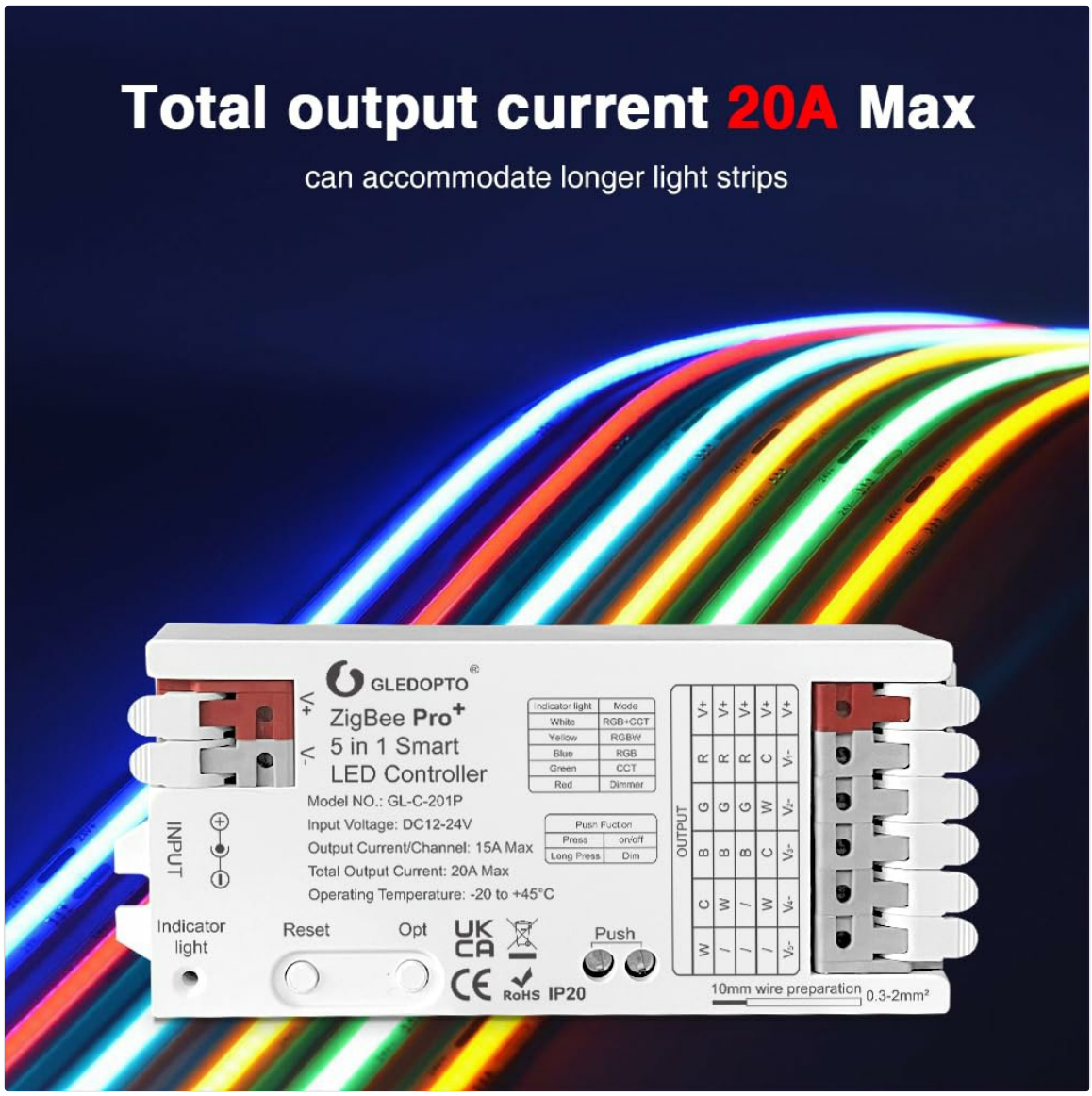


Image 6.3: The LED controller connected to multiple LED strips, illustrating its capacity to power longer light strips with a 20A maximum output.

This image demonstrates the controller's ability to accommodate longer LED strips due to its 20A maximum total output current.

2. **Step 2: Set Up Your ZigBee Bridge/Gateway**
   Plug in your ZigBee bridge/gateway and ensure it is powered on. Connect it to your Wi-Fi router using the provided network cable.
3. **Step 3: Download the Gateway App**
   Download the corresponding app for your ZigBee gateway (e.g., Tuya Smart, SmartThings, Philips Hue app) on your smartphone. Start the device searching process within the app. If the device is not found, try powering the controller off and on, or perform a reset.
4. **Step 4: Complete Setup and Control Lights**
   Once the controller is detected and paired with your gateway, you can use the app to control the light color, color temperature, and brightness of your LED strips.

Image 6.4: A four-step diagram illustrating the setup process: powering light sources, setting up the bridge, downloading the gateway app, and controlling the lights.

This image provides a visual guide to the four main steps for setting up and using the LED controller with a ZigBee gateway and smartphone app.

7. Operating Instructions

7.1. 5-in-1 Mode Switching

The controller supports five different LED strip modes: RGBCCT, RGBW, RGB, CCT, and Dimmer. An indicator light on the controller corresponds to each mode. To switch between modes, short press the "Opt" button once. The indicator light will change color to reflect the selected mode:

- **White:** RGBCCT Mode
- **Yellow:** RGBW Mode
- **Blue:** RGB Mode
- **Green:** CCT Mode
- **Red:** Dimmer Mode

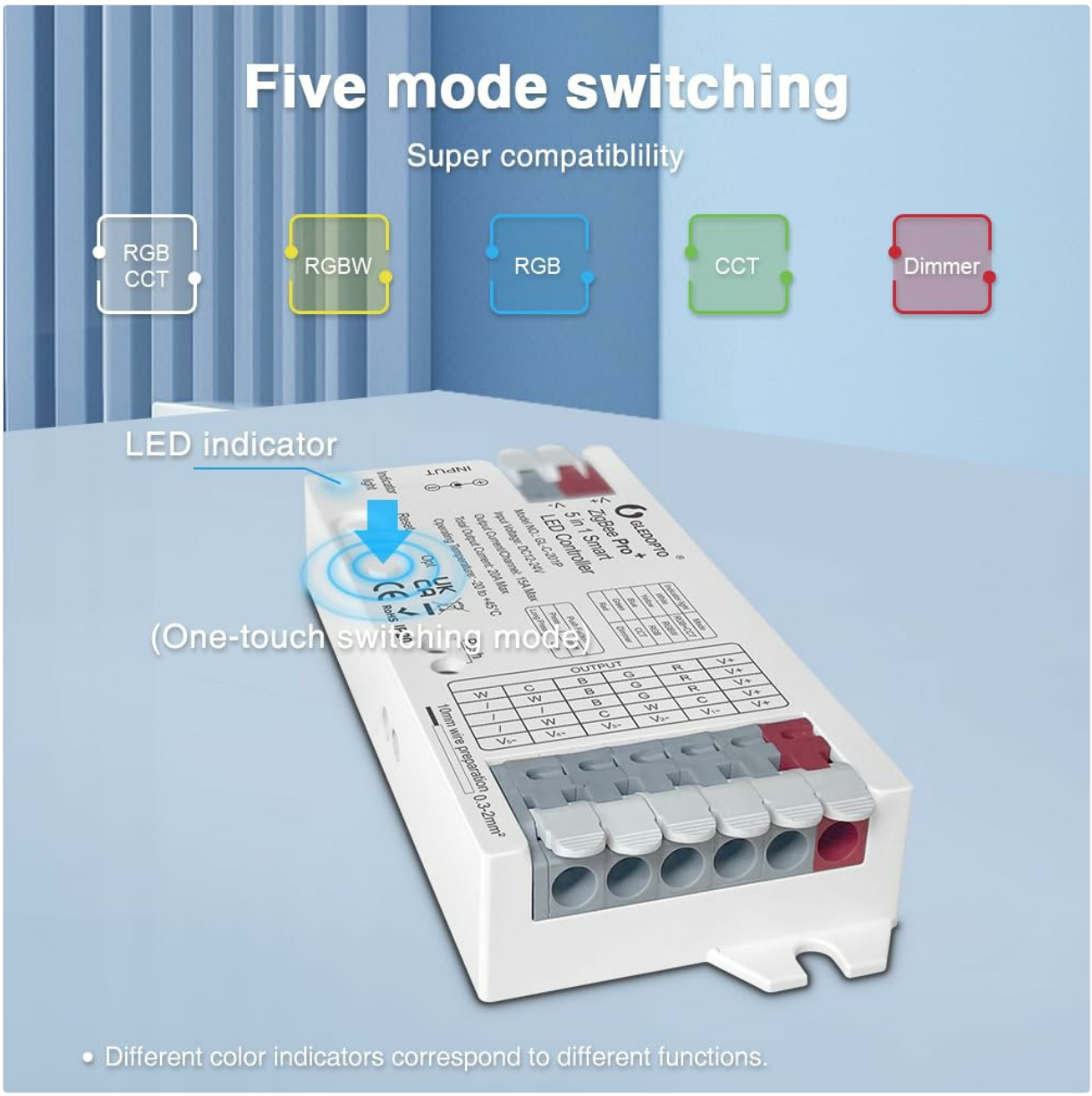


Image 7.1: Diagram illustrating the five different operating modes (RGBCCT, RGBW, RGB, CCT, Dimmer) and how to switch between them using the 'Opt' button and LED indicator colors.

This image visually explains the one-touch switching mode functionality, showing the different LED indicator colors corresponding to each of the five supported LED strip types.

7.2. Power-on Status Settings

You can configure the controller's default state after a power interruption:

- To set the power-on status, long press the "Opt" button for more than 5 seconds.
- The indicator light will flash in light blue.
- After 4 seconds of being off, the indicator will resume its previous color, indicating the setting is complete.
- The default power-on status is 'light on'.
- If the indicator flashes 3 times in light blue, it means the power-on status is set to 'light on'.
- If the indicator flashes 4 times in light blue, it means the power-on status is set to 'light off'.

7.3. Smart App and Voice Control

Once connected to a compatible ZigBee hub, you can control your LED strips using a smartphone app or voice commands:

- **Color Changing:** Adjust the color of RGB/RGBCCT/RGBW strips to millions of options.
- **Color Temperature Regulation:** For CCT/RGBCCT strips, adjust the white light color temperature from 2200K to 6500K.
- **Brightness Adjustment:** Dim or brighten your LED strips from 1% to 100%.

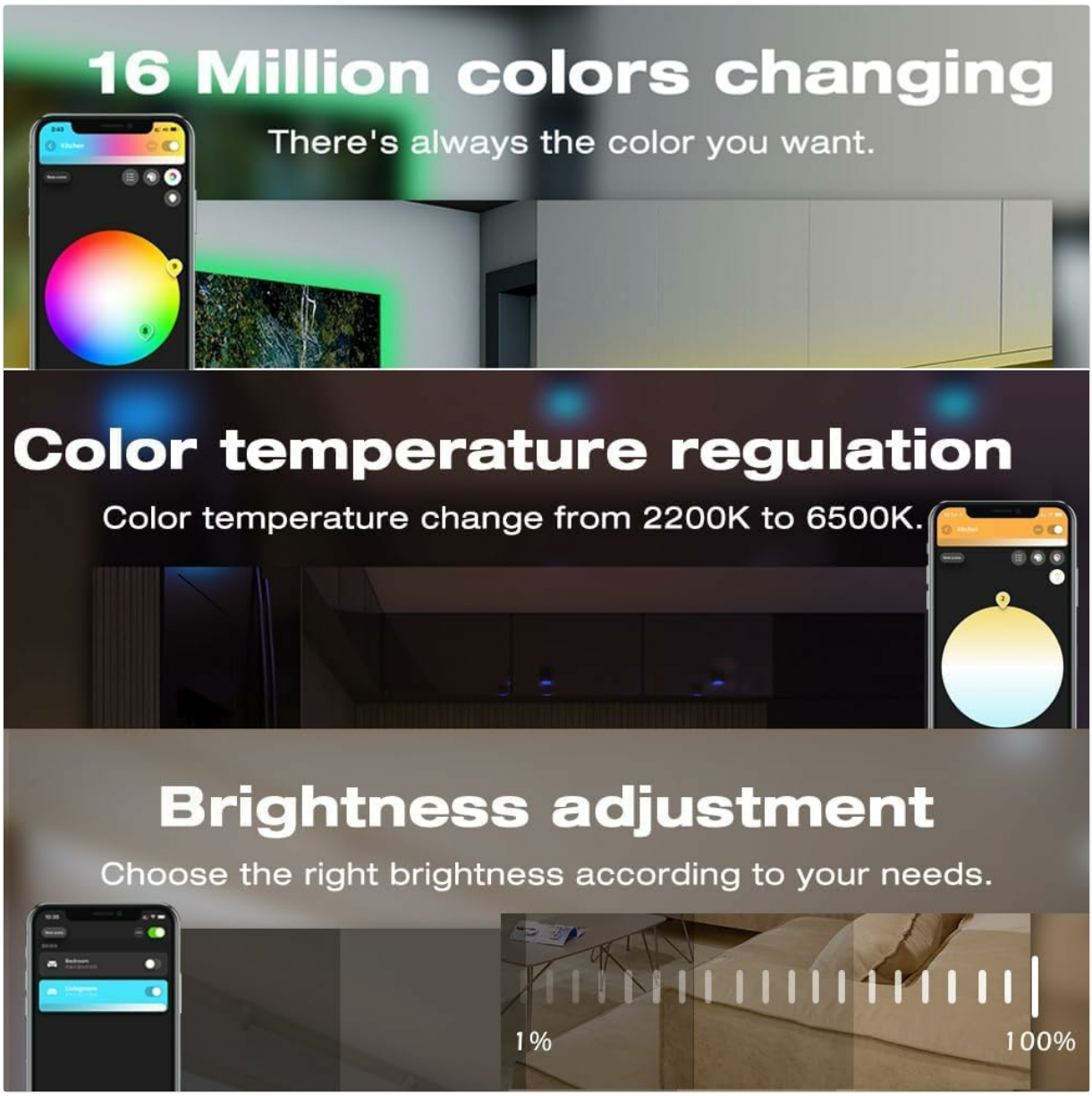


Image 7.2: Screenshots of a smartphone app demonstrating the control features for LED strips, including color selection, color temperature adjustment, and brightness control.

This image displays various app interfaces for controlling LED strip characteristics such as color, color temperature, and brightness levels.

8. Frequency Settings

The controller's PWM frequency can be adjusted to match different power supplies and minimize noise. To switch the frequency, short press the "Reset" key. The indicator light will flash in white and then resume its previous color after 2 seconds, indicating the frequency has changed.
Available frequencies and corresponding indicator flashes:

- **1000Hz (Default):** 3 flashes
- **2000Hz:** 4 flashes
- **4000Hz:** 5 flashes

- **8000Hz:** 6 flashes
- **600Hz:** 1 flash
- **800Hz:** 2 flashes

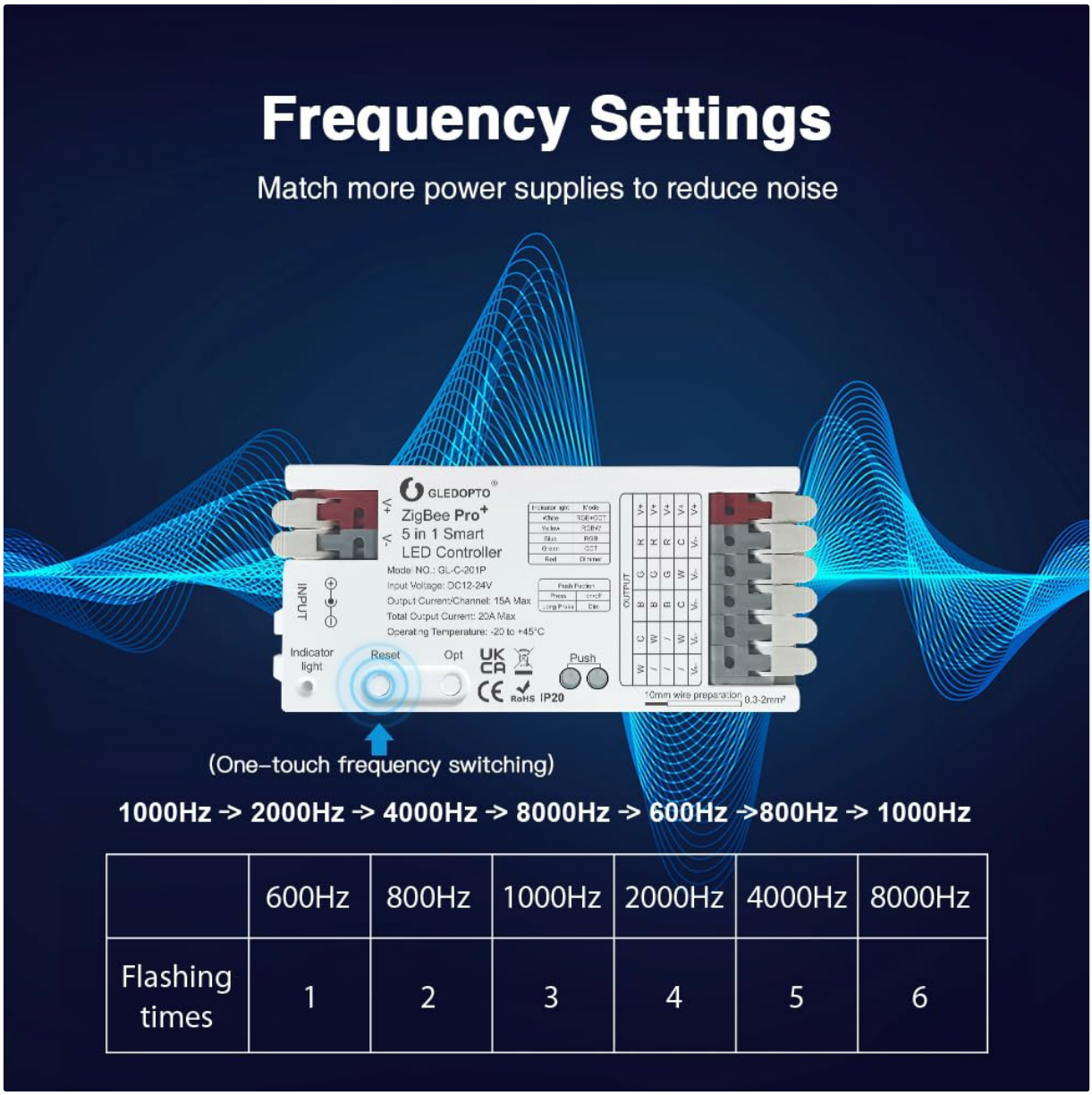


Image 8.1: Diagram explaining the frequency settings of the LED controller, showing the sequence of frequencies and the number of indicator flashes for each setting.

This image details how to adjust the PWM frequency of the controller using the reset button, listing the available frequencies and their corresponding indicator flash patterns.

9. Compatibility

The GLEDOPTO ZigBee 3.0 Pro+ controller is compatible with most ZigBee 3.0 gateways on the market. This includes, but is not limited to, the following platforms:

- Homey
- Conbee
- SmartThings
- Tuya

- Philips Hue
- Amazon Echo Studio / Echo Plus

The table below summarizes the compatibility for RGB, CCT, and Brightness control with various gateways:

Item	Philips Hue	Amazon Echo Plus	SmartThings	Tuya	Conbee	Homey
RGB	Yes	Yes	Yes	Yes	Yes	Yes
CCT	Yes	Yes	Yes	Yes	Yes	Yes
Brightness	Yes	Yes	Yes	Yes	Yes	Yes

Image 9.1: A chart detailing the compatibility of the GLEDOPTO controller with various ZigBee 3.0 gateways, including support for RGB, CCT, and brightness control.

This image provides a visual representation of the controller's compatibility with popular ZigBee gateways and the types of control functions supported by each.

10. Maintenance

To ensure the longevity and proper functioning of your LED strip controller, follow these maintenance guidelines:

- **Cleaning:** Gently wipe the controller with a dry, soft cloth. Do not use liquid cleaners or abrasive materials.
- **Environment:** Keep the device in a dry environment, away from direct sunlight, moisture, and extreme temperatures.
- **Connections:** Periodically check all wiring connections to ensure they remain secure and free from corrosion.
- **Ventilation:** Ensure the controller has adequate ventilation and is not covered, to prevent overheating.

11. Troubleshooting

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

- **Lights not turning on:**
  - Check power connections to the controller and LED strip.
  - Ensure the power adapter is functioning correctly and providing the correct voltage (DC12V-24V).
  - Verify that the LED strip is correctly wired to the controller's output terminals.
- **Controller not responding to app/voice commands:**
  - Ensure your ZigBee gateway is powered on and connected to your network.
  - Check if the controller is successfully paired with your ZigBee gateway. Try re-pairing if necessary.
  - Verify that your smartphone app is connected to the gateway and updated to the latest version.
  - Confirm that the controller is within the effective range of your ZigBee network.
- **Incorrect colors or modes:**
  - Ensure the correct 5-in-1 mode is selected on the controller (refer to Section 7.1).
  - Check the wiring of your LED strip to ensure it matches the selected mode (e.g., RGBW strip wired to RGBW terminals).
- **Flickering or unstable lights:**
  - Adjust the PWM frequency (refer to Section 8) to see if it resolves the issue, especially if using a different power supply.
  - Ensure the power supply is sufficient for the length and type of LED strip being used.
  - Check for loose connections or damaged wiring.
- **Device overheating:**
  - Ensure adequate ventilation around the controller.
  - Verify that the total current draw of your LED strips does not exceed the controller's maximum (20A total, 15A per channel).

12. Warranty and Support

Warranty and specific support information for the GLEDOPTO ZigBee 3.0 Pro+ 5 in 1 LED Strip Controller (Model GL-C-201P) are not provided in this manual. Please refer to the product packaging, the retailer's website, or contact GLEDOPTO customer service directly for details regarding warranty coverage and technical support.

13. Application Scenarios

The GLEDOPTO ZigBee 3.0 Pro+ 5 in 1 LED Strip Controller is suitable for various indoor lighting applications, enhancing ambiance and functionality in different spaces.

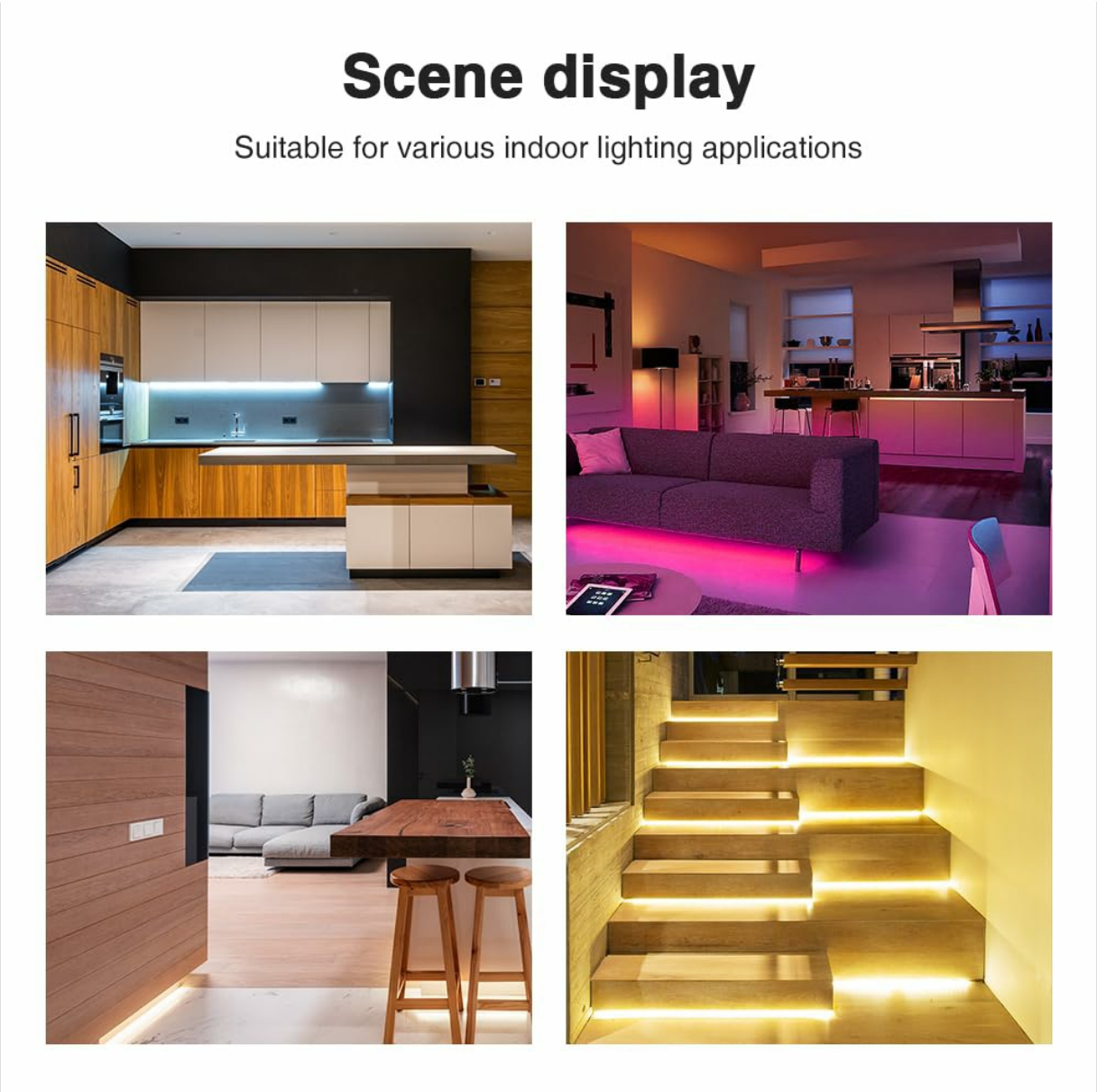
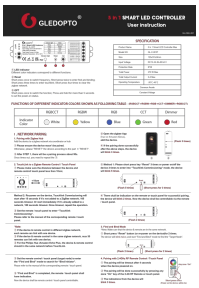
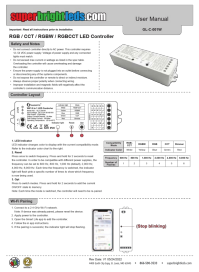
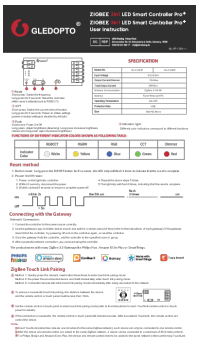


Image 13.1: Examples of the LED controller's application in different indoor settings, such as kitchens, living rooms, and staircases, showcasing various lighting effects.

This image displays several examples of how LED strips controlled by this device can be used to create decorative and functional lighting in residential environments.

Related Documents - GL-C-201P

	[Gledopto 5-in-1 Smart LED Controller User Manual] User instructions for the Gledopto 5-in-1 Smart LED Controller (Model: GL-C-001P), covering network pairing, reset procedures, factory reset, wiring diagrams for RGBCCT, RGBW, RGB, CCT, and Dimmer functions, power-on status settings, frequency settings, and saturation control via 2.4GHz RF remote.
	[Gledopto GL-C-301P ZigBee 5-in-1 LED Smart Controller Pro+ User Manual] Comprehensive user instructions for the Gledopto GL-C-301P ZigBee 5-in-1 LED Smart Controller Pro+. Learn about product parameters, button functions, wiring diagrams, gateway connection, remote control compatibility, and reset methods.
	[Gledopto Smart Lighting Products Catalog - Zigbee, WiFi, RF LED Controllers, Bulbs, and Fixtures] Explore the comprehensive range of Gledopto smart lighting solutions, including Zigbee 3.0, WiFi, and RF LED controllers, dimmers, RGB+CCT strips, downlights, bulbs, and floodlights. Enhance your home with intelligent, energy-efficient lighting.
	[Superbrightleds GL-C-001W RGB/CCT/RGBW/RGBCCT LED Controller User Manual] Detailed user manual for the Superbrightleds GL-C-001W LED controller, covering installation, wiring, Wi-Fi pairing, remote control, and preprogrammed modes for RGB, CCT, RGBW, and RGBCCT LED strips.
	[Gledopto Zigbee Controller Pro User Manual and Compatibility Guide] User instructions for the Gledopto Zigbee Controller Pro, including wiring diagrams, gateway compatibility, and remote control pairing. Learn how to connect and operate your Gledopto Zigbee devices with various smart home systems.
	[GLEDOPTO Zigbee 3in1/5in1 LED Smart Controller Pro+ User Manual] User instructions for the GLEDOPTO Zigbee 3in1 and 5in1 LED Smart Controller Pro+, covering specifications, setup, pairing, wiring, and troubleshooting.