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› ALITOVE SP105E Bluetooth LED Light Controller User Manual

ALITOVE SP105E

ALITOVE SP105E Bluetooth LED Light Controller User Manual

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your ALITOVE SP105E Bluetooth LED Light Controller. This controller is designed for individually addressable programmable LED strip pixel modules and lamps, offering a wide range of color modes and app control via Bluetooth.



Figure 1: ALITOVE SP105E Bluetooth LED Light Controller

2. PRODUCT FEATURES

- **Wide Voltage Input:** Supports DC5V to DC24V.
- **Bluetooth Control:** iOS and Android app control via Bluetooth 4.0 or later.
- **Broad Compatibility:** Supports most one-wire or two-wire LED driver ICs (e.g., WS2811, WS2812B, WS2801, SK6812, LPD6803, APA102, DMX512).
- **Rich Color Modes:** Features 200 color change modes, auto mode, and static color mode.
- **Adjustable Settings:** Brightness and dynamic speed are adjustable.
- **Pixel Control:** Supports up to 2048 pixels.
- **Memory Function:** Automatically saves user settings when powered off.

3. PACKAGE CONTENTS

- 1x SP105E Bluetooth LED Controller
- 1x 3-pin Female JST Connector

- 1x Mini Screwdriver
- 1x User Manual

Color Modes List

Mode #	Mode Description
AUTO	Modes shift automatically
RED	Static red
GREEN	Static green
BLUE	Static blue
WHITE	Static white
WARM WHITE	Static warm white
MODE 1,138	7 colors flow with gradient effect, forward and
MODE 2	7 colors flow
MODE 3	2 white pixels+ 8 pixels with another color, chase with trailing effect
MODE 4, 5	7 colors chase
MODE 6,7,8	Random two mixed colors chase
MODE 9,10,11	7 mixed colors chase, trailing chasing
MODE 12-18	Single color chases with trailing effect, forward and backward
MODE 19-24	Random two colors chase with trailing effect, forward and backward
MODE 25-31,157-163	Single color chases with gradient effect, forward and backward
MODE 32,33,35,38,39,42,44, 45,46,50,51,53,56,57,60,62, 63,64,139,140,142,145,146,	Random two colors chase with gradient effect, forward and backward
MODE 34,36,37,40,41,43,47, 48,49,52,54,55,58,59,61,65, 66,67,141,143,144,148,147,	Random two colors flow with trailing and gradient effect,forward and backward
MODE 68-75	7 Pixels with 7 different colors chase, forward and backward
MODE 76-96	Random two colors flow, forward and backward
MODE 97-103	One pixel with one color chase, forward and backward
MODE 104-110	One pixel with one color + five pixels with another color, flow,forward and backward
MODE 111-122, 189-200	2 color A pixels + 7 color B pixels + 2 color A pixels, chase, forward and backward
MODE 123-128	1 color A pixel + 1 color B pixel + 18 color A pixels + 1 color B pixel + 1 color A pixel

MODE 129-135	All the pixels with the same color become bright or dim gradually.
MODE 136	All the pixels change colors gradually with gradient effect
MODE 137	All the pixels change colors directly
MODE 164-188	Single color chases with trailing and gradient effect,forward and backward
STATIC COLOR	You can set any static color by the color wheel

Figure 2: Included components with the SP105E controller.

4. SPECIFICATIONS

Parameter	Value
Model	SP105E Bluetooth Magic Color Controller
Working Voltage	DC5V~24V
Maximum Current (DC Barrel)	4A max
Maximum Current (Terminal Connectors)	5.5A max
Remote Distance	20 Meters
Product Size	85mm*45mm*22mm
Max Pixels Controlled	2048 pixels
Control Method	App Control (Bluetooth 4.0+)

5. SETUP GUIDE

5.1 Controller Overview and Connections

Familiarize yourself with the controller's ports and supported LED driver ICs.



Figure 3: SP105E Controller with labeled ports and a list of compatible LED driver ICs.

5.2 Power Input Options

The controller offers two ways to connect power:

- **DC Barrel Jack:** For 5.5x2.1mm DC plugs.
- **2-pin Terminal Connectors:** For direct wiring of power cords.

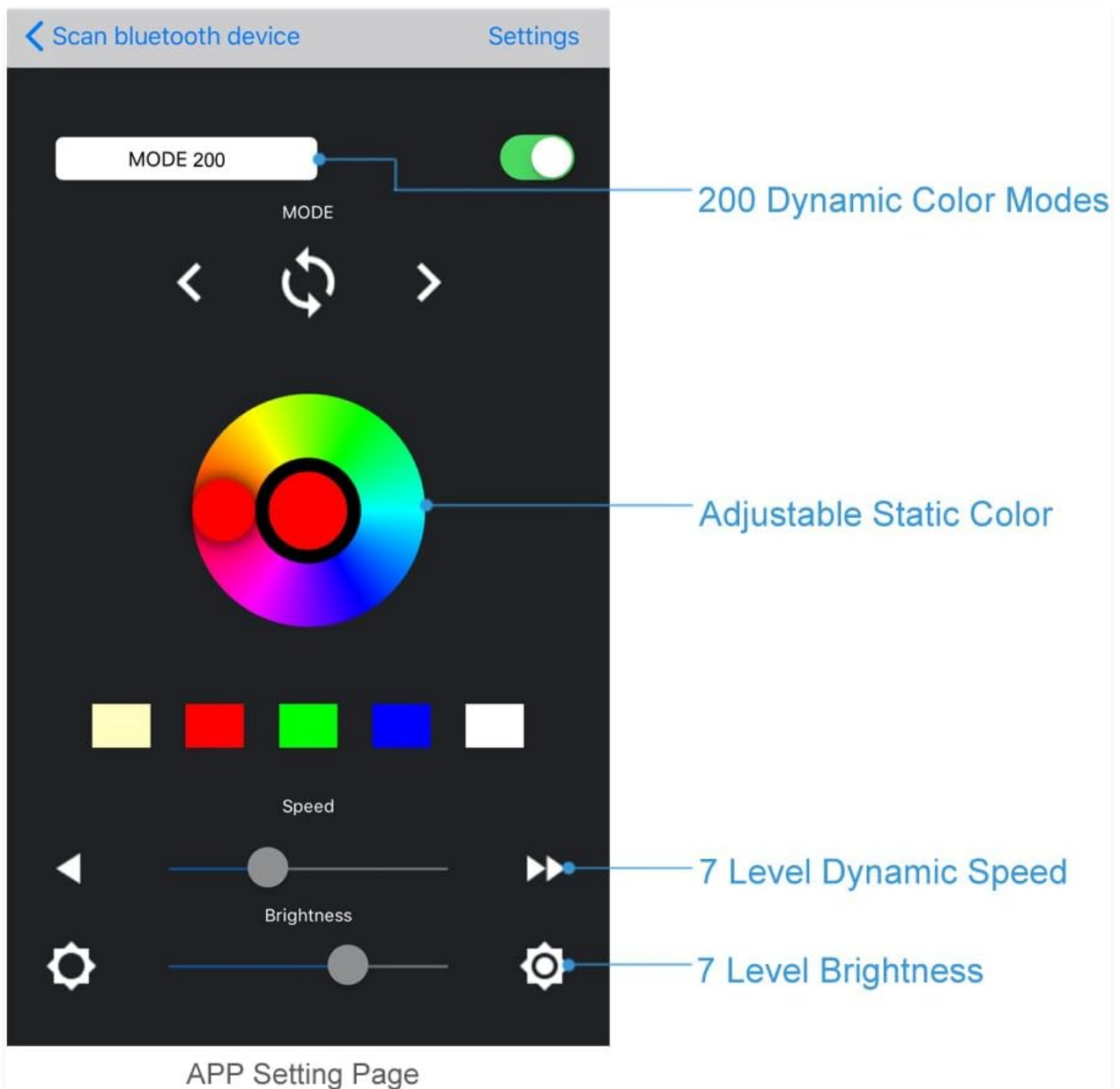


Figure 4: The SP105E controller showing both DC barrel and 2-pin terminal power input options.

5.3 Wiring the LED Strip

Connect your addressable LED strip to the controller as shown in the diagram. Ensure correct polarity and data line connection.



Figure 5: Wiring diagram illustrating the connection between the SP105E controller and an addressable LED strip.

5.4 App Installation and Bluetooth Connection

Download the 'Magic-LED' app from your device's app store. Ensure your smartphone supports iOS 8.0 / Android 4.4 or later and Bluetooth 4.0 or later.



Figure 6: Screenshot showing the 'Magic-LED' app download and the Bluetooth device scanning process.

5.5 App Configuration

After connecting, configure the app settings for your LED strip:

1. **Set Total Pixels:** Input the total number of pixels in your LED strip (up to 2048).
2. **Select IC Type:** Choose the correct LED driver IC type. *Note: For WS2812B, select WS2811.*
3. **Choose RGB Channel Order:** Select the correct R/G/B channel order for your strip.



Figure 7: App interface for setting total pixels and selecting the LED driver IC type.

6. OPERATING INSTRUCTIONS

6.1 App Interface Overview

The app provides intuitive controls for managing your LED lights.

Remote Control by Your Smartphone



Figure 8: Main app interface showing color wheel, mode selection, brightness, and speed controls.

6.2 Color Modes and Adjustments

Explore the 200 dynamic color modes, static color options, and adjust brightness and speed.

Dual Power Input Ports



Figure 9: A partial list of available color modes and their descriptions within the app.

- **Mode Selection:** Browse through 200 dynamic modes or select 'Auto' for automatic cycling.
- **Static Color:** Use the color wheel to select any static color.
- **Brightness Control:** Adjust the light intensity using the brightness slider.
- **Speed Control:** Modify the speed of dynamic modes using the speed slider.

7. IMPORTANT WARNINGS AND PRECAUTIONS

- **Voltage Matching:** The output voltage of your power supply **must** match the working voltage of your LED lights. The controller does not regulate output voltage. Using a higher voltage than your LEDs require will damage them.
- **Power Supply Capacity:** The output power (voltage and amperage) of your power supply must be equal to or greater than the maximum power required by your LED lights. Insufficient power can lead to

improper function.

- **LED Type:** This controller only supports LED lights with smart ICs (individually addressable). It is not compatible with ordinary RGB/RGBW LED strips without ICs.
- **Smartphone Compatibility:** Ensure your smartphone is iOS 8.0 / Android 4.4 or later and supports Bluetooth 4.0 or later. Not compatible with Samsung Mobile or Blackberry smartphones.
- **Reverse Connection:** The controller is designed to prevent reverse connection of the power supply, protecting both the LED lights and the controller.

8. TROUBLESHOOTING

- **Lights Not Turning On:**

- Verify power supply voltage matches LED strip voltage.
- Check all wiring connections for secure contact and correct polarity.
- Ensure the power supply has sufficient wattage/amperage for your LED strip.

- **Incorrect Colors or Flickering:**

- In the app settings, confirm the correct LED driver IC type is selected (e.g., WS2811 for WS2812B).
- Verify the RGB channel order is correctly set in the app.
- Check that the total pixel count in the app matches your LED strip.

- **Cannot Connect via Bluetooth:**

- Ensure your smartphone's Bluetooth is enabled and meets the minimum version requirements (Bluetooth 4.0+).
- Restart the app and the controller.
- Check for any known compatibility issues with your specific smartphone model (e.g., Samsung Mobile, Blackberry).

- **Limited LED Functionality:**

- Confirm your LED strip is individually addressable (contains smart ICs).
- Ensure the pixel count is correctly set and not exceeding the 2048 pixel limit.

If issues persist, please contact ALITOVE customer support for further assistance.

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the product packaging or contact ALITOVE directly through their official channels. ALITOVE aims to resolve any issues within 12 hours.