

---

TECHNICAL DOCUMENT

# GLEDOPTO ESP32 WLED Digital Pixel LED Controller With Mic Music App Control GL-C-010WL

Product reference: GL-C-010WL

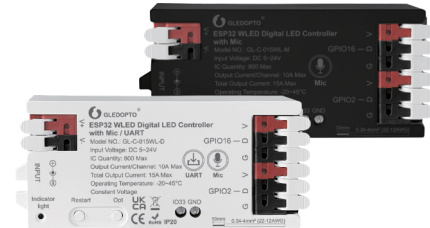
Brand: GLEDOPTO

## Original Brand document

The original technical pages follow this distributor cover and are preserved without changes to Brand identity, specifications, diagrams, certifications or claims.

Source file: GL-C-010WL.pdf

## WLED Series LED Strip Controller User Instruction



GL-C-014WL、GL-C-015WL  
GL-C-015WL-M、GL-C-015WL-D

### ESP8266 WLED Digital LED Controller

Model:GL-C-014WL

Input Voltage:DC5-24V

Output Current/Channel:10A Max

Total Output Current:15A Max

Temperature:-20~45℃

WirelessCommunication:WiFi

Dimensions:108x45x18mm



### Wiring Terminal Instructions

The WLED controller can support a total of three output channels.The output terminal connections"GD V" correspond to the "GND DATA VCC" pins of the digital LED strips.Among them,D refers to the default output group for GPIO2,so please prioritize using this group.The other group,D for GPIO1,can only be used after configuration in the APP.IO14 is an extended GPIO signal port that can be customized for use.



### ESP32 WLED Digital LED Controller

Model:GL-C-015WL

Input Voltage:DC5-24V

Output Current/Channel:10A Max

Total Output Current:15A Max

Temperature:-20~45℃

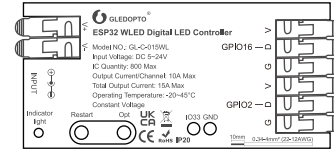
WirelessCommunication:WiFi

Dimensions:108x45x18mm



### Wiring Terminal Instructions

The WLED controller can support a total of three output channels.The output terminal connections"GD V" correspond to the "GND DATA VCC" pins of the digital LED strips.Among them,D refers to the default output group for GPIO16,so please prioritize using this group.The other group,D for GPIO2,can only be used after configuration in the APP.IO33 is an extended GPIO signal port that can be customized for use.



### ESP32 WLED Digital LED Controller with Mic

Model:GL-C-015WL-M / GL-C-015WL-D

Input Voltage:DC5-24V

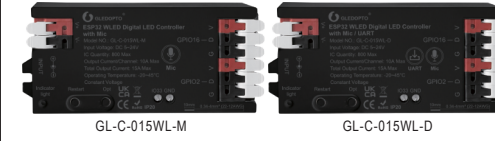
Output Current/Channel:10A Max

Total Output Current:15A Max

Temperature:-20~45℃

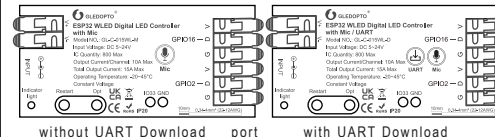
WirelessCommunication:WiFi

Dimensions:108x45x18mm



### Wiring Terminal Instructions

The WLED controller can support a total of three output channels.The output terminal connections"GD V" correspond to the "GND DATA VCC" pins of the digital LED strips.Among them,D refers to the default output group for GPIO16,so please prioritize using this group.The other group,D for GPIO2,can only be used after configuration in the APP.IO33 is an extended GPIO signal port that can be customized for use.



### APP Download Method



1. IOS : "App Store" Search and download WLED or WLED Native within the app.

- 2.Android:Download from website <https://github.com/Aircoooke/WLED-App/releases>.



### APP Configuration Steps

- 1.Power on the WLED controller.
- 2.Open the phone settingsand enter WiFi settings,find"WLED-AP" and connect to it with the password "wled1234".
3. After successful connection,it will automatically jump to the WLED page (or enter the website 4.3.2.1 in the browser to enter the WLED page).
- 4.Click "WIFI SETTINGS",set the WiFi account and password,and the click"Save & Connect" at the top of the screen to save.



- 5.Keep the phone and WLED controller connected to the same WIFI connection,enter the WLED APP (See figure 5-1),click the "+" in the upper right corner of the screen (See figure 5-2),and then click "DISCOVERLIGHTS..." (See figure 5-3).When the button below displays "Found WLED!",it means that the WLED controller hasbeen found (See figure 5-4).Click the checkmark in the upper right corner to return to the main page.The found WLED controller will be displayed in the list (See figure 5-5).



Figure 5-1 Figure 5-2 Figure 5-3 Figure 5-4 Figure 5-5

### LED Strip Configuration

Go to the WLED control page and click on the "Config" button in the upper right corner.Then,select "LED Preferences" and navigate to "Hardware setup" to configure the LED strip information.



### Relay Configuration

Relay Configuration Go to the WLED control page,click on the top right corner "Config",select "LED Preferences",then find "Relay GPIO".Configure Relay GPIO as 12,unchecked Invert,and click Save to apply the settings.



Note:When using thisfunction,everytimethelight isturned on or off,the powerto theoutput terminalwillbesimultaneouslyturned on or off to save thepower electricity.It isimportant to notethat thisfunction cannot turn off supplyforbackup power.

### Mic Configuration (If this feature is available)

1. Go to the WLED control page,click on "Config" in the top right corner,select "Usermods",find "Digitalmic" after entering,

- configure according to the configuration information,click "Save" after configuration iscomplete,and then power off the controller.
2. Go to the WLED control page,click on "Info" at the top,click on the button next to "AudioReactive" to use the Mic.

### Configuration Information:

1. Microphone type:Generic 12S
2. 12S SD pin: 26
3. 12S WS pin: 5
4. 12S SCK pin: 21



Note:After configuring themicrophoneparameters,you need to power offand on thecontrolleronceto usethemicrophonefunction.

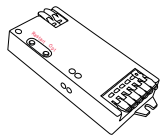
### Description of Button Functions

Restart:

Pressing the button will power offthe controller module, releasing it will power it back on.Useful when the controller needsto be restarted after configuring the microphone.

OPT button:

- 1.Short press:Power on/off.
- 2.Long pressfor 1 second:Switch colors.
- 3.Long pressfor 10 seconds:Reset the WLED controller and activate the WLED-AP hotspot.



### Reset to Factory Settings

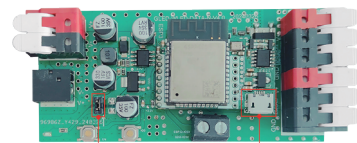
1. Button Reset  
Long press OPT button for 10 seconds.
2. APP Reset

Go to the WLED control page and click on the top right corner "Config". Click on "Security & Updates" at the bottom,and then scroll down to find "Factory reset" and check the box. Click "Save" to reset the controller.



### UART Download (if this function is available)

- 1.Open the controller case.
- 2.Remove the jumper cap① (used to connect the motherboard power).
- 3.Insert the Micro-B data cable to download.
- 4.After downloading,reinstall jumper cap.



Jumper cap①

Micro-B

Jumpercap① :Connect thePCB bottom board power.

Note:When using Micro -B port for programming,thejumper cap needsto beremoved.After downloading,reinstall jumper cap.

### Supported Chips

WS2811、 WS2811F、 WS2812B、 WS2814A、 SK6812、 SM16703、 SM16703SP3、 FL19038、 FW1935、 FL19038,etc.

### Troubleshooting and Solution

| Number | Symptoms                                                                                            | Solution                                                                                                                                                                                                                                                                                                                                                     |
|--------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | Indicator light is not on                                                                           | Check whether the input power connection is correct                                                                                                                                                                                                                                                                                                          |
| 2      | APP shows "offline"                                                                                 | 1. Check if the phone is on the same network as the controller.<br>2. Check if the controller is out of the range of the WIFI connection, causing unstable connection.<br>3. Turn off and on the controller to retry.                                                                                                                                        |
| 3      | APP is connected, but the light strip is not controllable                                           | 1. Check if the power supply is working properly.<br>2. Check if the power supply voltage matches the light strip.<br>3. Check if the input power connection is correct.<br>4. Check if the light strip connection is correct.<br>5. Check if the GPIO settings in the APP are correct.<br>6. Check if the light strip IC model in the APP is set correctly. |
| 4      | The brightness of the light strip is low, and the front and back colors are significantly different | 1. Check if the power supply is working properly.<br>2. Check if the power supply matches the light strip.<br>3. Check if all connections are good, and use conductive and short wires as much as possible for connection.<br>4. Add power supply at an appropriate position.<br>5. Check if the APP has set a limit on brightness or current.               |



Attention

1. Before turning on the power,please ensure that all connectionsare correct and secure,and do not operatewhilethepower ison.
2. Theproduct should beused under therated voltage.Using it under excessive or insuffi cient voltage may cause damage.
3. Do not disassemble the product,asit may cause fire and electric shock.
4. Do not usetheproduct in environmentsexposed to direct sunlight,moisture, high temperatures,etc.
5. Do not usetheproduct in metalshielded areasor around strong magnetic fields,asthismay severely affect the wirelsssignal transmission ofthe product.

### Disclaimers

1. Ourcompanywillupdatethecontent ofthismanualbased improvement ofproduct functionality.Theupdateswillbedisplayed in the latest version ofthismanual,without further notice.
2. Dueto our continuousadoption ofnew technologies,product specifications maychangewithout further notice.
3. Thismanual isprovided for referenceand guidanceonly and doesnot guaranteecompleteconsistency with theactual product.Theactual application should bebased on theactualproduct.
4. Thecomponentsand accessoriesdescribed in thismanual do not represent thestandard configuration oftheproduct.Thespecificconfiguration issubject to thepackaging.
5. All text,tables,and imagesin thismanual are protected by relevant national lawsand maynot beused without our permission.
6. Thisproduct may becompatiblewith third-party products(such asapps,hubs, etc.),but our company doesnot takeresponsibility for compatibility issuesor partial lossoffunctionality caused by changesin third-party products.