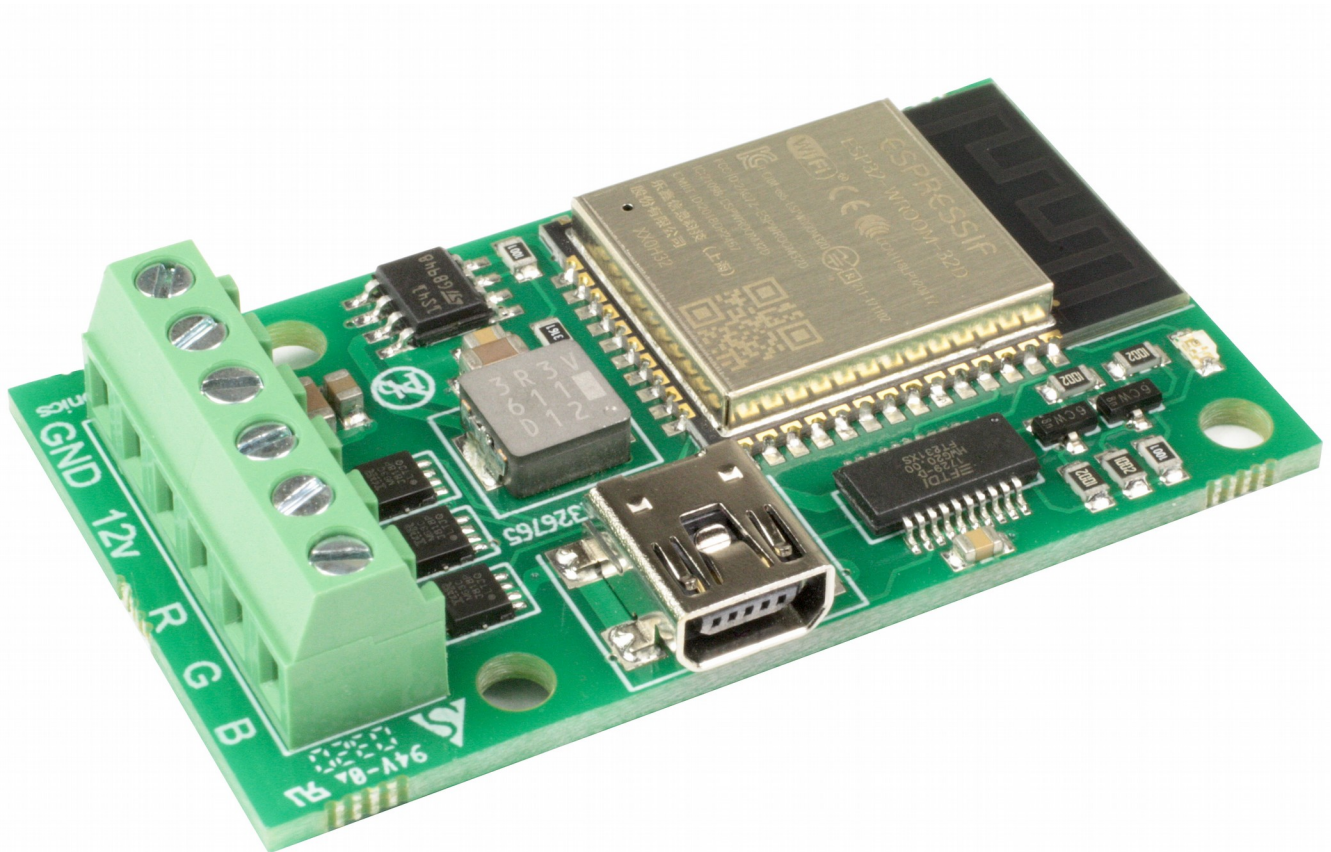


# WLED03

User Manual Version 1.00



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## Overview

The WLED03 is a WIFI connected PWM driver for 12v LED strip lights using the popular ESP32.

It provides 3 channels driving up to 3 Amps each.

Power for the board is 12v dc, which can be provided by a standard universal wall power supply. A 1A or greater supply should be selected depending on the requirements of your lights.

The module requires 30mA to operate.

We have a case design available you can download and 3D print, supplied as ready to slice STL files and also the original FreeCAD file so you can adapt the design with custom features or fixtures.

## Control Protocols

The module is controlled by a simple text command:

RGB 255 0 0 [CR]	Lights up full Red
RGB 0 255 0	Lights up full Green
RGB 0 0 255	Lights up full Blue
RGB 255 255 255	Bright White
RGB 67 67 67	Dim White
RGB 255 255 0	Yellow

I'm sure you get the idea, just RGB followed by three numbers between 0 and 255

Commands may be sent by the USB port at 115200 baud, or over Wifi.

## Connections

These are clearly marked on the PCB.

Ground (0v) is on the left followed by two 12v terminals, one for the power supply and the other for the LEDs. They are connected together on the PCB.

This is followed by the Red (R), Green (G) and Blue (B) terminals which are connected to the LED strip. See the photo and the PCB dimension drawing.

## WiFi

The WLED03 connects via 2.4GHz WiFi to your network. Therefore it must be located in a position where it gets a good WiFi signal. The module should not be enclosed in a metal box/cabinet as this will shield the WiFi signal.

You can check the signal level by looking at the RSSI figure which is reported by the ST (STatus) command.

## Configuration

The WLED03 is configured by connecting a USB cable to your PC and running a terminal program. PuTTY is a good option if you don't have any other preferences.

The serial port should be set to 115200 baud, 8 bit, 1 stop, no parity, no flow control.

## USB Configuration Commands

### ST Status. Return the system status

```
Status:  
Firmware Version: 1.0  
IP: 0.0.0.0 (192.168.0.167)  
Subnet: 0.0.0.0  
Gateway: 0.0.0.0  
Primary DNS: 0.0.0.0  
Secondary DNS: 0.0.0.0  
SSID: DEVANTECH  
Password: *****  
ASCII TCP Port: 17123  
RSSI: -64
```

When the IP address is set to 0.0.0.0 this means that the IP address is being provided by your networks DHCP server. In that case the assigned IP address is also provided, as above.

The password will only show as \*\*\*\*\*.

## RB ReBoot.

This will restart the module. It may produce a lot of random characters as the ESP32's boot logging runs at a different baud rate. If it succeeds in connecting to your network it will report the IP address.

Re-Booting.. .

嶮???????#XL##C????5)5)????ia?b?????????命#??\*UY?o????? ##i#U?5 ?Q?????

WiFi connected.

IP address:

192.168.0.6

## IP Sets the modules IP address.

Enter IP followed by the required IP address. Entering address 0.0.0.0 means the IP will be obtained from your networks DHCP server. The new IP address will take effect after the next re-boot.

IP "192.168.0.123"

OK. Saved IP Address: 192.168.0.123

## SB Sets the SuBnet mask.

SB "255.255.255.0"

OK. Saved Subnet Mask: 255.255.255.0

## GW Sets the GateWay address.

This is normally the IP address of your router.

GW "192.168.0.1"

OK. Saved Gateway Address: 192.168.0.1

## **PD Sets the Primary DNS.**

The can be the IP address of your router which will then use your ISP provided DNS. You can also specify the DNS such as 8.8.8.8 for Googles DNS server.

PD "192.168.0.1"  
OK. Saved Primary DNS: 192.168.0.1

## **SD Sets the Secondary DNS.**

The can be the IP address of your router which will then use your ISP provided DNS. You can also specify the DNS such as 8.8.4.4 for Googles DNS server.

SD "8.8.4.4"  
OK. Saved Secondary DNS: 8.8.4.4

## **SS This sets the SSID.**

The SSID is the public name of your WIFI network Enter your WIFI's SSID here.

SS "Devantech"  
OK. Saved SSID: Devantech

## **PW Sets your networks WIFI password.**

PW "K]~kCZUV\*UGA6SG~"  
OK. Saved Password: K]~kCZUV\*UGA6SG~

## **PA Sets the TCP/IP port number for the ASCII commands.**

PA 17126  
OK. Saved ASCII port number: 17126

## TCP/IP Command.

The WLED03 has a built in TCP/IP command which allows you to control the module remotely. All commands are sent using plain ASCII text. PuTTY is a good cross platform terminal program to use for testing. The TCP/IP port is the one you set-up with the PA command during USB configuration.

## RGB Sets the RED, GREEN and BLUE levels

RGB 255 255 0                      Yellow

levels should be between 0 and 255

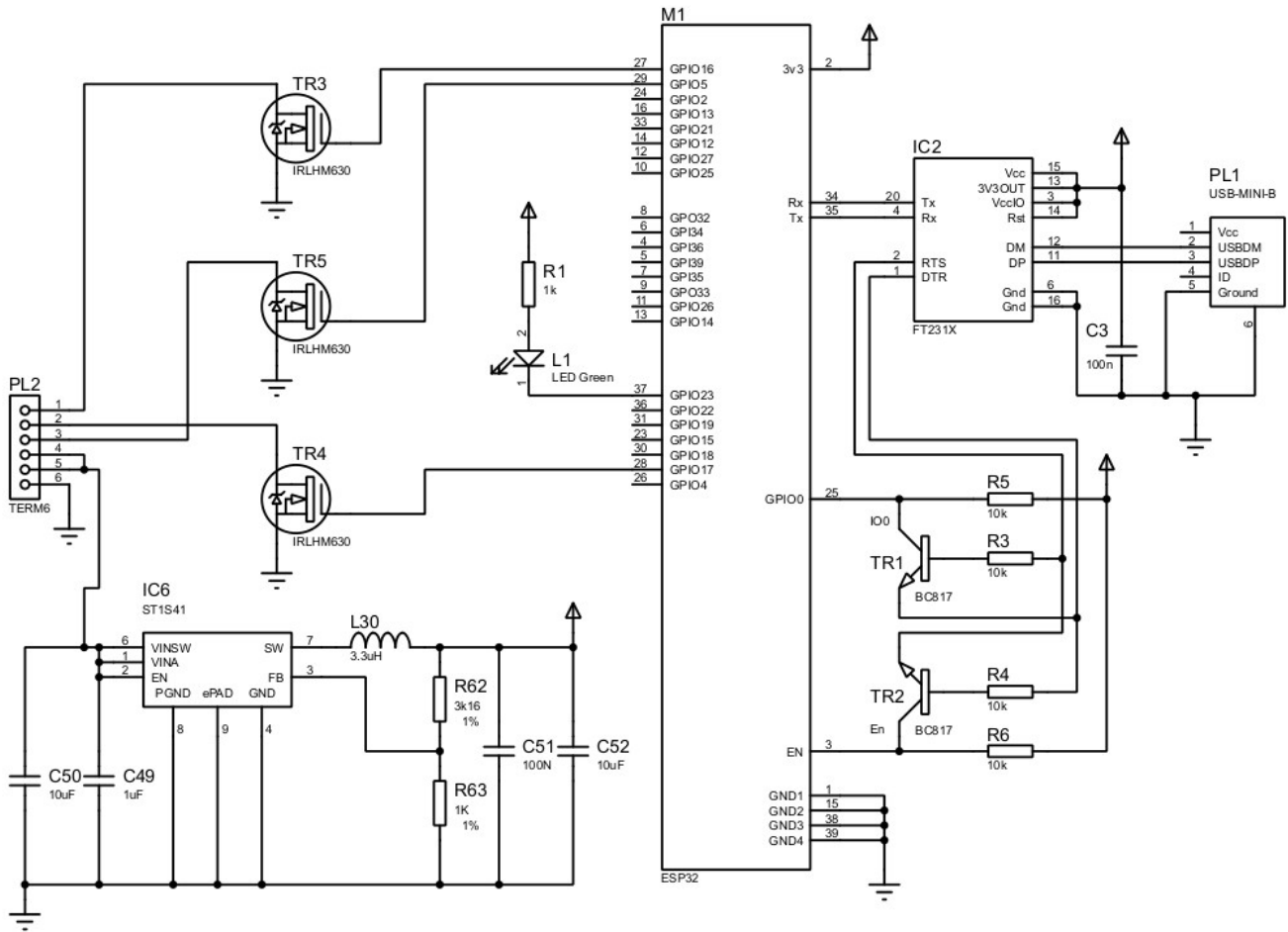


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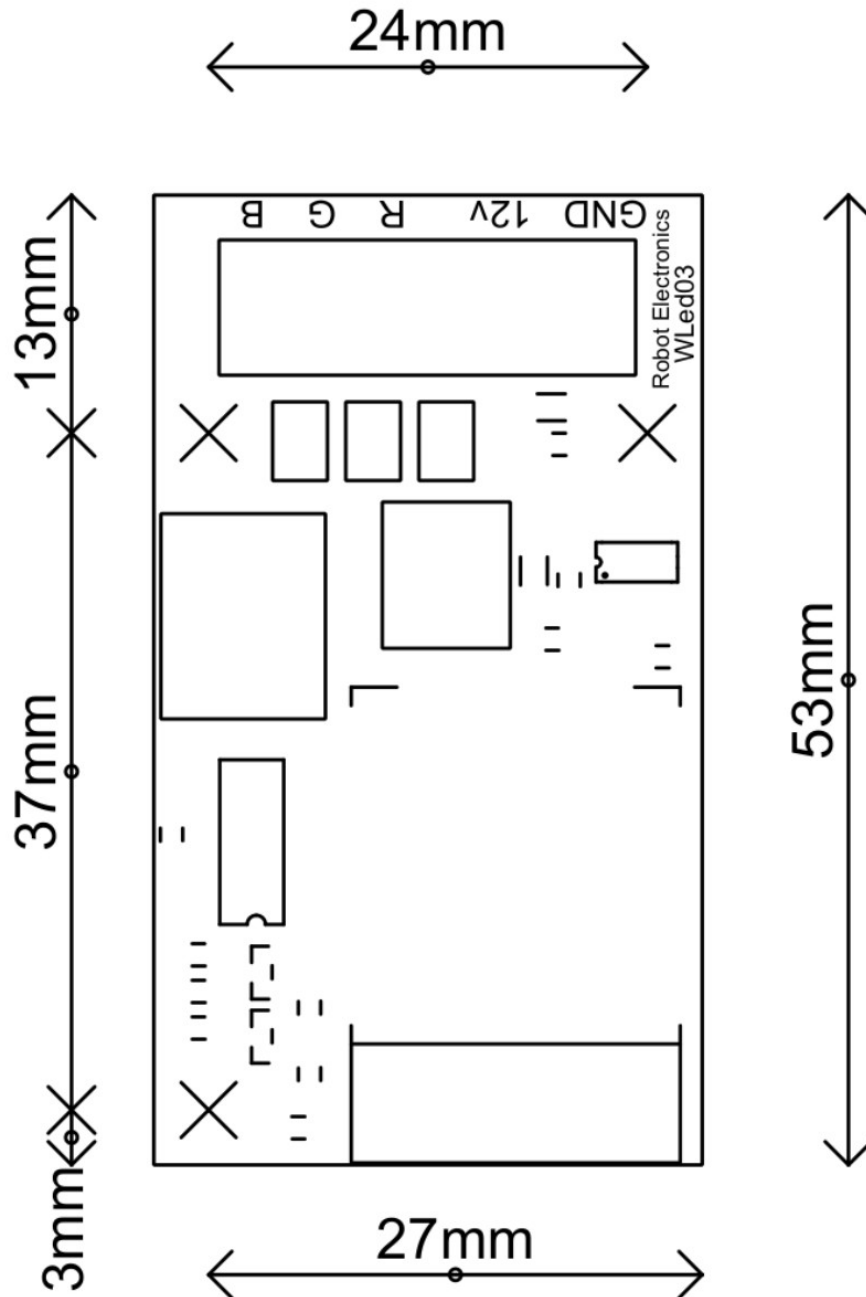
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## Schematic

### CPU



## PCB dimensions



## 3D printed case

Whilst we do not supply a case for the WLED03, we do have a design you can print for yourself.



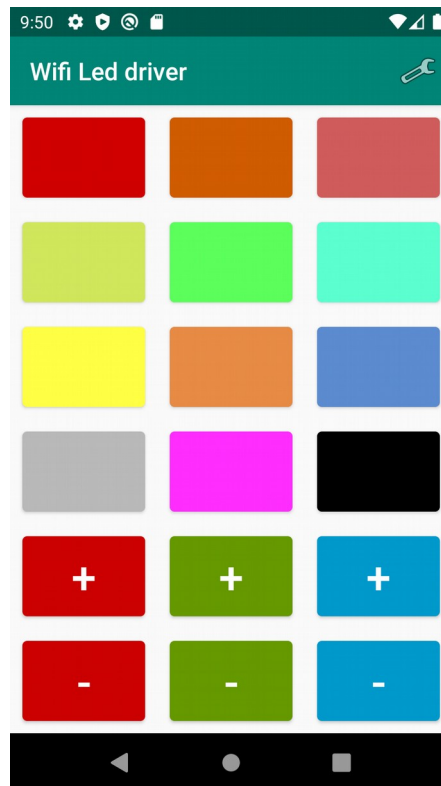
The STL and original FreeCAD files may be downloaded from:

[www.robot-electronics.co.uk/files/wledcase.zip](http://www.robot-electronics.co.uk/files/wledcase.zip)

## Andriod/IOS Apps

An App is available for the WLED03 for Android and IOS from the respective stores.

Search for “Devantech” then locate the Wifi LED Driver from the list.



There are 12 preset colours available on the upper buttons.

The 6 lower buttons allow adjustment of the colour and the WLED03 is updated as you press them.

When you are happy with your new colour you can assign it to any of the 12 presets with a long press.

## Notes