



## ANAVI Light pHAT

**Make your Raspberry Pi bright and shiny with an RGB LED strip and ANAVI Light pHAT!**

ANAVI Light pHAT is an open source hardware, Raspberry Pi add-on board for controlling a 12 V RGB LED strip. Furthermore, the board supports sensors for light, temperature, humidity, gesture recognition, and motion detection.

ANAVI Light pHAT is fully compliant with the popular open source home automation platform, Home Assistant. Thanks to ANAVI's open source application, the ANAVI Light pHAT can be easily integrated into Home Assistant as an MQTT JSON Light component.

ANAVI Light pHAT was designed using the free and open source application, KiCAD. All source files are available in our GitHub repo. All boards will be manufactured

locally in Plovdiv, Bulgaria. Getting started with the add-on board is easy, no soldering is required. A comprehensive user's manual with exact steps for using ANAVI Light pHAT on Raspberry Pi running the Raspbian GNU/Linux distribution will be provided.

### **Who Needs It and Why?**

ANAVI Light pHAT is fun and easy to use. No previous experience is required. You don't need to be a tech whiz to use it. The exact steps for getting started are described in the user's manual. Use your bare hands to assemble it and a screwdriver to connect the RGB LED strip.

ANAVI Light pHAT is fun and easy to use. No previous experience is required. You don't need to be a tech whiz to use it. You can assemble it without any tools, while only a screwdriver is needed to connect your RGB LED strip.

- Automating lighting with the open source software platform Home Assistant
- Making a do-it-yourself magic lamp controlled with gestures
- Making a do-it-yourself unique decorations for the holidays
- Exploring a project that combines free and open source software with open source hardware

### **Features & Specifications**

- Terminal block for attaching 12 V RGB LED strip
- Slots for up to three plug and play I2C sensor modules
- Slot for PIR motion sensor
- UART pins for debugging
- EEPROM with board manufacturer information and a device tree fragment

### **Compatibility**

ANAVI Light pHAT works with

- Raspberry Pi 3

- Raspberry Pi 2
- Raspberry Pi A+
- Raspberry Pi B+
- Raspberry Pi Zero
- Raspberry Pi Zero W

ANAVI Light pHAT officially supports a PIR motion sensor as well as the following I2C modules with:

- BH1750 sensor for light
- HTU21D sensor for temperature and humidity
  - APDS-9960 sensor for RGB color and gesture detection

You can also attach any other I2C sensor, but you will have to take care of their software integration.

The PIR motion sensor allows you to turn on the lights automatically when someone is passing by. The sensor for temperature and humidity could be used to make a weather station as a secondary function of your Raspberry Pi. The gesture detection sensor is a great addition for defining custom hand gestures for controlling the lights or just making a modern version of Aladdin's magic lamp

## Frequently Asked Questions (FAQ)

### ***What 12 V RGB LED strip is included in the kits?***

All kits include 1M 12V RGB LED strip with 30 LEDs (size 5050), IP 20 and power consumption of 7.2W.

### ***What power supply do I need?***

You need a 5 V USB power supply for Raspberry Pi and a 12 V power supply with a standard 2.1x5.5mm DC jack for your light strip. Select a 12 V power supply with sufficient output current and power depending on the length and specifications of your RGB LED strip.

***Can I use ANAVI Light pHAT without 12 V power supply?***

No, the main feature for controlling RGB LED strip requires a 12V power supply.

***Is there a recommended 12 V power supply?***

ANAVI Light pHAT has been tested using 12 V power supplies from SUNNY Computer Technology Europe such as [SYS1530-1212-W2E](#).

Make sure that you are using a 12 V power supply from a trusted supplier. Cheap, untested power supplies can be risky and unreliable.

***Why power supply is not included in any of the kits?***

We were unable to source power supplies with universal plugs for US/EU/UK at an acceptable price, and power needs will vary based on application. Nowadays, 12 V power supplies with 2.1x5.5 mm DC jack are a commodity item, therefore you should be able to easily find a suitable unit online or at your local electronics store.

***Can I remotely control ANAVI Light pHAT from a web browser on my smartphone, tablet, or laptop?***

Yes, you may install popular open source platform [Home Assistant](#) on your Raspberry Pi and follow the exact steps to integrate ANAVI Light pHAT.

***Is ANAVI Light pHAT an open source project?***

Yes, ANAVI Light pHAT is an open source hardware project powered and created with free and open source software.

The board is designed with the free and open source electronics design automation suite KiCAD. The schematics and the PCB design are available at [GitHub under CC BY-SA 4.0 license](#).

Open source sample applications written in the C programming language are also provided. ANAVI Light pHAT can be easily integrated into the open source platform [Home Assistant](#) as an MQTT JSON Light component using the ANAVI open source daemon that communicates over the MQTT protocol.