1. Features and specifications

Brighten any room or space with this fully Arduino® compatible, ESP32 controlled BrightDot clock kit.

This clock comes in a black or white edition and features 60 bright RGB LEDs that reflect against the surface on which you mount the clock, hence telling you what time of day it is.

The SMD RGB LEDs are pre-assembled but the rest of the solder work is up to you! Solder the light blocking pads into place and connect the clock to the ESP32 by using the data cable. Then it's time to pick out a nice spot to hang the clock with the invisible mounting option!

Once you've overcome the choice overload of available hanging spots, you can connect the clock to your wireless network and it will sync automatically with the NTP time server. Afterwards, you will be able to control every animation, colour or setting that is available by using the built-in web page which is accessible with your smartphone or PC. Another choice overload situation! Other cool features include the alarm and the LED auto dim for when its bedtime.

Features

- connects to your wireless network
- synchronizes automatically with NTP time server
- control the clock's animations, colours, settings and more on the built-in web page with your smartphone or from your computer (Windows®, macOS® & Linux®)
- fully Arduino® compatible
- GMT and DST user configurable
- alarm feature
- auto dim feature (night time)
- invisible mounting option
- open source firmware
- ESP32 controlled
- included:
    - PCB LED ring with 60 pre-assembled RGB LEDs, blinding pads and ESP32 connection board
    - data cable
    - ESP32
    - 5V 2.5A (12.5W) power adapter with EU, UK, US and AU plugs included
- PCB colour: white

Specifications

- dimensions:
    - cable: 2 - 2.5 m
    - clock: 26.5 x 26.5 x 1 cm
- voltage: 5 V (USB)
- power consumption: max 4 A (on full brightness & with an all white display)
- USB powerbrick not included (5 V, min. 2,5 A / 12 W)
- USB connector (micro USB) included
- WLAN: 2.4 GHz

Explaining the parts of the clock

The clock has 3 pieces; the watchface, the ESP-32 controller, and the universal power brick.

- The watchface has 60 RGB LEDs that can display time in a myriad of ways. It needs to be hung flush to a wall so the effect of the LED light bouncing off of the wall is sharp. You can do this by using the small holes in the top of the watchface; loop a thin piece of wire (fishing wire) through these holes and tie the ends together. You can now hang the watchface on a screw or nail in the wall without the screw or nail being visible.

- The ESP-32 controller is the brains of the operation. This module does all the heavy lifting such as connecting to your wireless network, syncing time, controlling the leds and animations, serving the webpage to control the clock, and much more. This module is connected to the watchface with a cable (do not exceed 3 meters!) and to the power brick.

  It also has 2 buttons. The left button will restart the clock when pressed. Yet, it will remember all the stored settings. The right button will clear the stored WLAN credentials when pressed and then restart the clock. This means that, If you press this button when the clock is connected to your wireless network it will forget how to connect to that network and restart the clock in access point mode (more on that later). Use this feature if you want to change the network to which the clock is connected (or was connected to before). Don’t worry, the clock will remember all the other stored settings.

- A 5V 2.5A (12.5W) power adapter with EU, UK, US and AU plugs is also included. The clock is rather power hungry when a lot of leds are on at the same time (and are white) and at full brightness, but when only a few leds are on at the same time (simple animations) it only just sips power.

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