AdaBox 020
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Introduction

Hi there!

If you're looking to subscribe to AdaBox, click here! ()

If you're here, it's because you were given the gift of electronics with an AdaBox! Perhaps you are a beginner who is getting started with your AdaBox. Or maybe you just want to relive what it's like being a beginner at electronics again. But most of all, you want to have fun with wirelessly programmable LED glasses, and coding! (If, rather than learn all that, you'd like to look at pictures of cats instead, please check https://www.adafruit.com/galleries/cats-of-engineering ()

And, you’re in luck: there's never been a better time. Seriously. We're not just saying that. It's wild how great a time this is for you to build your own wireless LED glasses and display fun graphics for all to see and you strut around like Joe Cool.

Gone are the days where you need thousands of dollars of equipment and a physics/math background. Nowadays, if you want to learn to work with electronics and code microcontrollers, you can jump right in for $100 or less and any sort of computer.

Who is this for?

Anyone who is interested in learning how to program and build interactive projects, and with access to a modern web browser. That's pretty much the minimum. Remember, this guide is specifically for people who have purchased or received an AdaBox subscription!

You don't need to know a lot of physics or math, and just like an Art Degree isn't required for making art and being creative, you don't need to have a computer science or mechanical engineering degree. It helps if you're comfortable using computers but that's a skill most people pick up through life.

If you know how to program already - great! If not, don't worry, we'll teach you enough to be dangerous.
Who isn't this for?

While you can follow along without an AdaBox, it will not make as much sense unless you have all of the components and more which either came as a gift or purchased yourself - remember, the goal is helping beginners!

This guide is also not for Lars.

If you're an expert, please visit our thousands of other tutorials and jump right in at learn.adafruit.com

Who are you?

Great question. This is me:

I'm Ladyada, and I love to teach people how to build stuff and how they can be creative with technology.

So, are you ready?

Let's do this thing!

Unboxing Adabox 020
You are about to embark on a journey to another dimension, a dimension of curiosity, wonder, and creativity. A journey in a wondrous land of electronic invention. Next Stop, the ADABOX ZONE!

This Halloween, we're going to strap in and face a future so bright we have to wear LED shades to compete. No matter whether you spend all fall working on a costume, or if you throw on a party hat before stepping out the door, this ADABOX will complement your look with style: we're at the forefront of wearable technology with wireless-controllable Bluetooth glasses bedazzled with 116 tiny RGB LEDs.

Thanks to CircuitPython's new wireless programming capability, you can code up motion or sound-reactive patterns over the air! With BLE connectivity you can code even if all you've got is a phone or tablet.

This ADABOX comes to us courtesy of Digi-Key. Like a magical artifact that can make your thoughts come to life, Digi-Key's encyclopedic catalog is there to help you pull your fantastic inventions from the land of ideas into concrete reality.

**In The Box**

**LED Glasses Kit**
These come as a front plate containing 116 RGB LEDs and the side PCB that controls the designs.
STEMMA QT Cable
Use this to connect the two PCBs together.

Glasses Frames
These fashion frames are in style if you want that chunky face-framing look. They're also great as a mechanical frame to attach the glasses PCB to.

Plus: bonus lanyard!
3 x AAA Battery Holder and Batteries
This is your portable power pack for the LED glasses.

JST PH Extension Cable
This cable is used to make it easier to clip the battery pack to your jacket or belt.
Small Cable Ties & Foam Tape
These will let you securely attach the PCBs to the glasses frames.

The zip ties in this box changed last-minute due to supply chain issues and may not fit the front-glasses PCB holes. Please use wire or string if the zip ties don’t fit easily!

Adafruit EyeLights LED Glasses

[Adafruit EyeLights LED Glasses](https://www.adafruit.com/product/1027)
LED Glasses Assembly

Here's how to assemble the LED glasses, frames, LED Driver board, and battery pack.
Attach Glasses to Frames

Line up the frames with the glasses.

Using zip ties (colored purple here for illustration purposes), thread through the glasses holes and frame, then tighten the zip ties as shown.
Some AdaBoxes may come with larger-than-desired zip ties due to supply chain surprises! If your zip ties seem to be very difficult to pull through the holes of the LED glasses, don't force them! Get some smaller ones or use the twist tie method shown below.

**Alternate Fastener**

You can use wire as a sort of zip tie in case you don't have any appropriately sized zip ties on hand.

Just pass through the holes, twist, and snip to length.
Driver Board
Use two zip ties to attach the LED Driver board to the glasses temple as shown here.

Tighten and then snip the excess.
Connection
Connect the LED Driver board to the LED Glasses using the STEMMA QT connector cable.
Power
Use the 3x AAA battery pack and JST PH cable to provide power to the glasses as shown.

You can extend the length using the extension cable shown below.
Downloads

This is the software that shipped on your Adabox 020 Glasses Driver board. To load, simply double-tap the reset button to get into the bootloader, and drag the following UF2 file to the GLASSESBOOT drive.

Adabox 020 Original Demo UF2