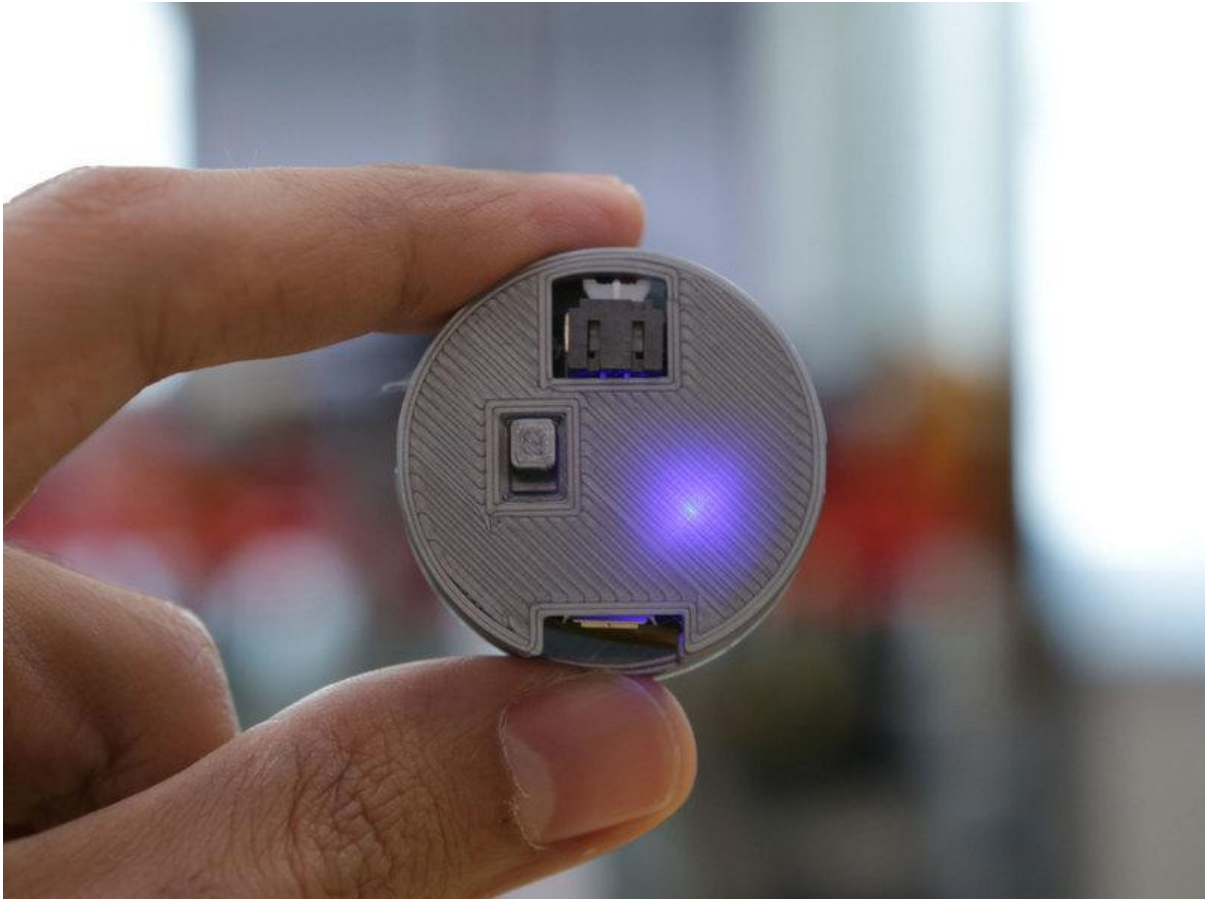




# GEMMA M0 Case

Created by Ruiz Brothers



<https://learn.adafruit.com/gemma-m0-case>

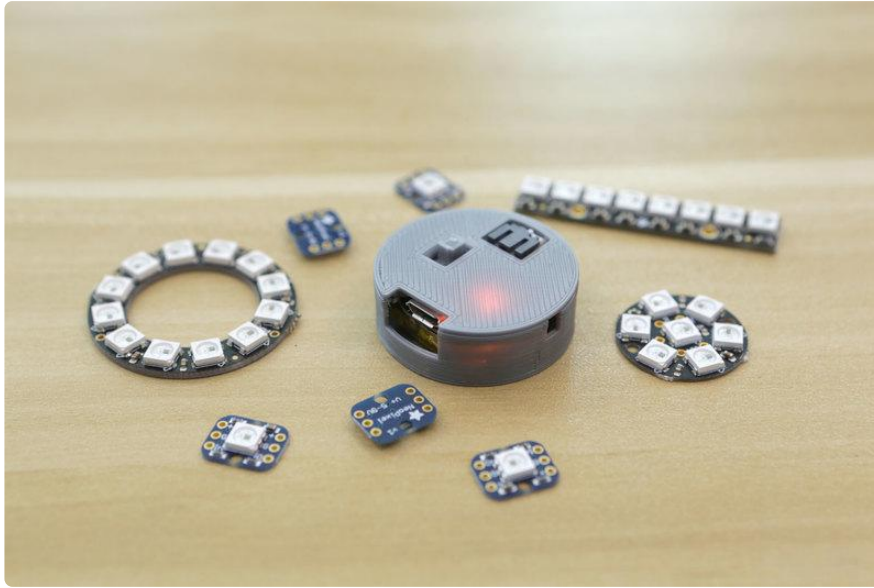
Last updated on 2023-08-29 03:25:27 PM EDT

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# Overview



## 3D Printed Case for GEMMA M0

If you're working on a project using the Adafruit GEMMA M0, you may want a case to protect it. This simple two piece enclosure can house the PCB and a 150mAh lithium ion polymer battery.

## Portable GEMMA M0

The PCB is secured to two standoffs with M2.5 (6mm long) screws. We have a nice assortment of M2.5 sized nylon screws and nuts that will work well. The case allows access to the microUSB port for powering and programming. A slide switch extension allows you to power the GEMMA M0 on and off. To keep the case (relatively) slim, an opening on the cover lets the JST connector poke through the top.



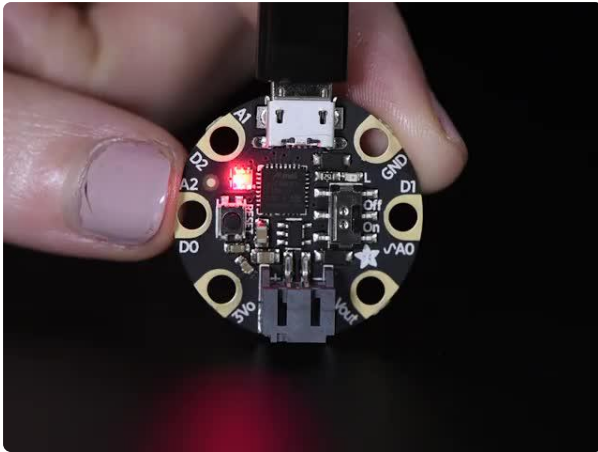
## Snap Fit Cover

The cover features a "snap fit" lip that locks onto the case, making a fairly durable connection. No screws needed. The cover can be modified to completely cover the GEMMA M0 – So you have the option to remove all of the holes and openings.



## Wire Access

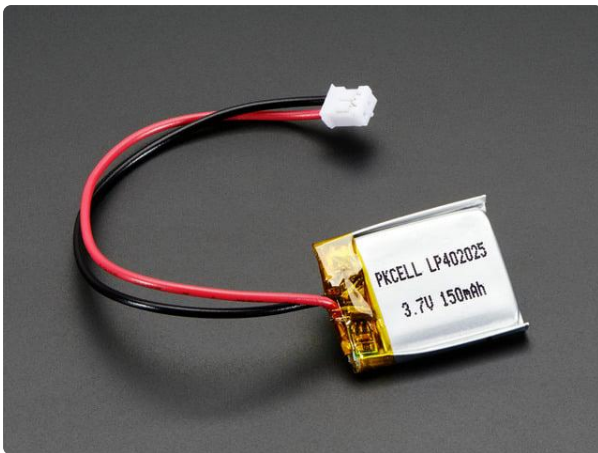
On the sides of the case are two "slits" that allow wires to pass through. If you're wiring sensors, NeoPixels or other components, you can fit the wires into the slits and close the cover. These slits can be removed, or add more.



### Adafruit GEMMA M0 - Miniature wearable electronic platform

The Adafruit Gemma M0 is a super small microcontroller board, with just enough built-in to create many simple projects. It may look small and cute: round, about the...

<https://www.adafruit.com/product/3501>



### Lithium Ion Polymer Battery - 3.7v 150mAh

Lithium-ion polymer (also known as 'lipo' or 'lipoly') batteries are thin, light, and powerful. The output ranges from 4.2V when completely charged to 3.7V. This...

<https://www.adafruit.com/product/1317>



### Black Nylon Machine Screw and Stand-off Set – M2.5 Thread

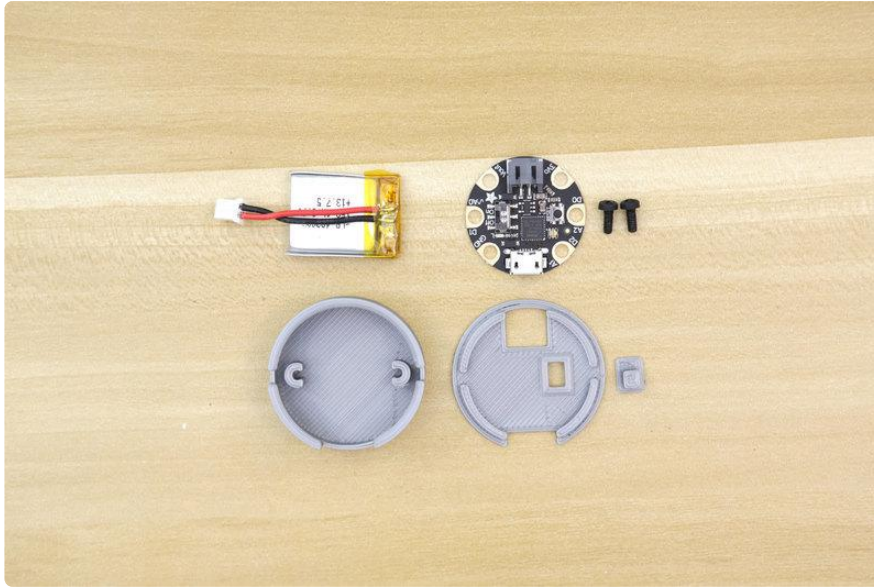
Totaling 380 pieces, this M2.5 Screw Set is a must-have for your workstation. You'll have enough screws, nuts, and hex standoffs to fuel your maker...

<https://www.adafruit.com/product/3299>



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# 3D Printing



## What If I Don't Have A 3D Printer?

Not to worry! You can use a 3D printing service such as [3DHubs \(\)](#) or [MakeXYZ \(\)](#) to have a local 3D printer operator 3D print and ship you parts to you. This is a great way to get your parts 3D printed by local makers. You could also try checking out your local Library or search for a Maker Space.



### Filament for 3D Printers in Various Colors and Types

Having a 3D printer without filament is sort of like having a regular printer without paper or ink. And while a lot of printers come with some filament there's a good chance...

<https://www.adafruit.com/product/2080>

## Materials, Materials

PLA is the defacto of 3D printing for it's ease of use, low cost and generally most widely used filament. However, if you want something stronger there's lots of options. PETG, Nylon, CPE, ABS, etc, etc. It's important to note, this design was tested only with PLA filament.

## Tolerances

Generally tolerances will vary from printer to printer, slicer to slicer and material to material. If things don't quite fit right, you may need to adjust your slice settings.

## Slicer Settings

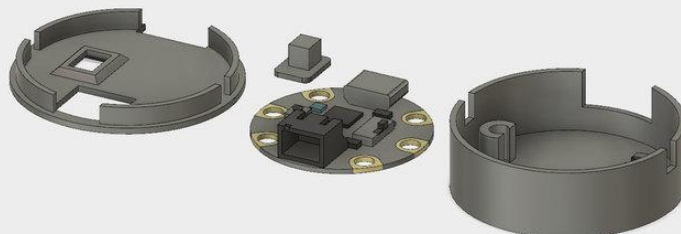
CURA and Simplify3D are the most common slicing software for 3D printers. Depending on your printer, you'll need to adjust your settings accordingly. Below is a list of general settings we used to test this design. No supports are necessary. Use a raft or brim if necessary.

- 0.4mm nozzle
- 0.48mm extrusion width
- 2 shells
- 0.2 layer height
- 220c extruder temperature
- 65c for heated beds
- 20% infill

[Download STLs](#)

[Download CURA for FREE](#)

[Buy Simplify3D](#)

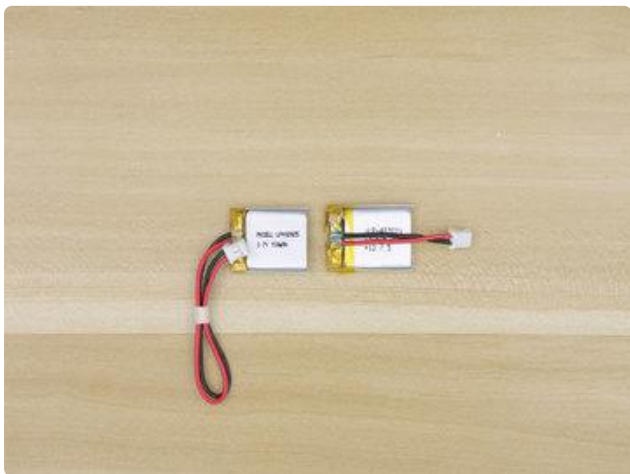


## Modify, Adjust & Tweak

The design source files are available to download if you're interested in making adjustments. The enclosure was designed in Autodesk Fusion 360. Use the public shared link below to access the design source. You can download the solids in your preferred CAD format (Fusion 360 Archive, STEP, SAT, IGS, etc.) by clicking on the dropdown labeled as download in the upper top right of the design source page.

Download Autodesk Fusion360  
Source

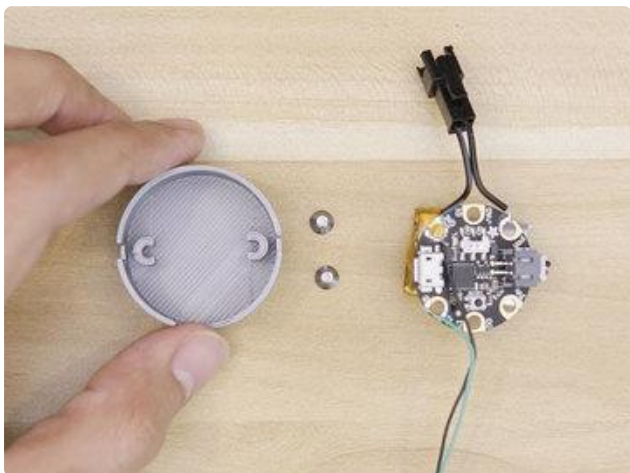
## Assembly



### Battery Cable

The battery cable is of decent length for most projects. Unfortunately, we need to cram things into very tight spaces. The stock cable is just too long to fit into the 3D printed case. So we'll desolder the cable from the battery, trim the wire short and rewire it back to the battery.

How to Rewire Battery



### Case for GEMMA

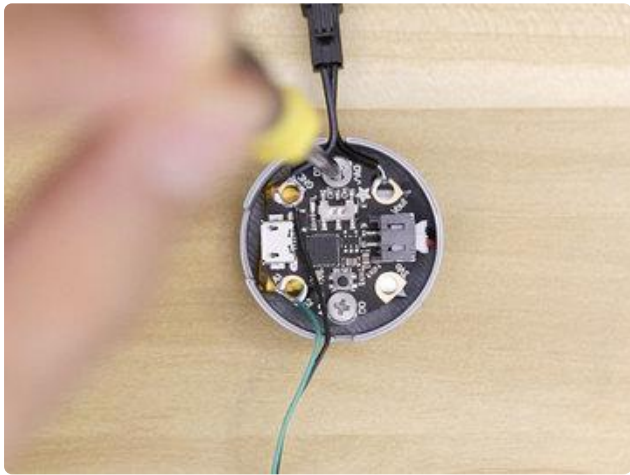
We'll need two M2.5 (6mm long) machine screws to secure the GEMMA M0 to the 3D printed enclosure. You can use the [nylon screw set \(\)](#) from the shop or source your own. The nylon plastic screws are less likely to short anything out.





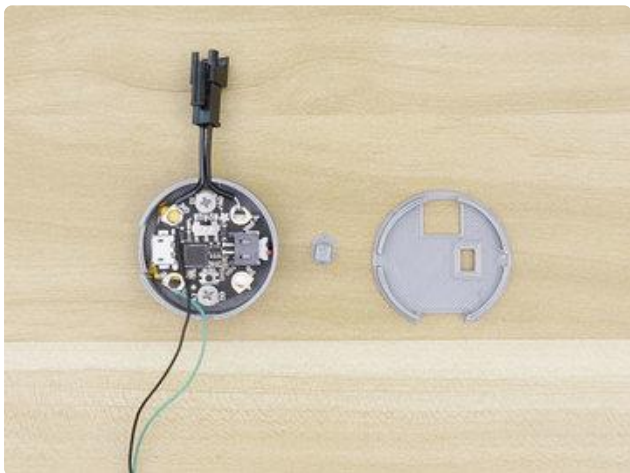
## Install GEMMA M0

Place the GEMMA M0 and battery into the 3D printed case with the battery fitting in between the two standoffs. The microUSB port on the GEMMA M0 should be facing the cutout in the case. You'll have to adjust the PCB so the holes on the GEMMA M0 line up with the two standoffs. The case has slits on each side to accommodate for the wiring.



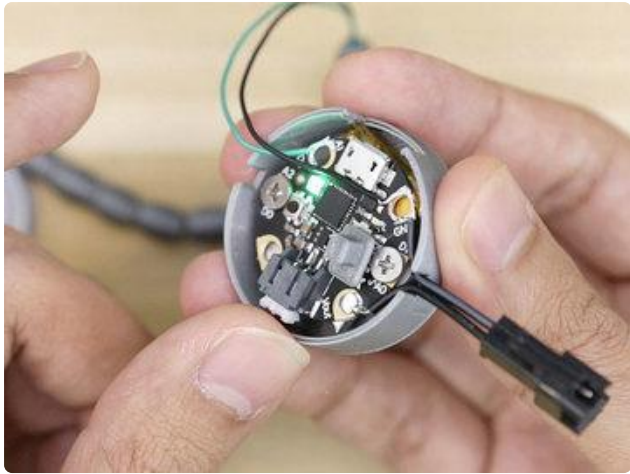
## Secure GEMMA M0

Insert and fasten the two machine screws through the top of the GEMMA M0. Make sure the battery is not being punctured by the screw threads. You may want to hold the GEMMA M0 down and keep it steady while fastening.



## GEMMA Cover Switch

Thoroughly inspect the GEMMA M0 and make sure it's installed correctly, with the PCB being flush with the standoffs. MicroUSB facing the cutout. Wiring neatly placed through the slits on the side. With the GEMMA M0 now installed to the case, we can get the switch extension and cover.



## Install Switch Extension

This little switch extension piece fits on top of the switch actuator and basically allows access to it. It has a little hole on the bottom that fits over the on-board switch.



## Install GEMMA Cover

With the switch extension installed, place the cover over the case and orient them so the holes line up with the cutouts. Firmly press down on the cover to snap it into the case. The JST is exposed to make this as slim as possible.

## Using The Case

Depending on your project, you may need to make additional tweaks. The bottom of the case is flat so it can be attached to different surfaces using double sided tape, velcro or any number of adhesives.

## How Big Is It?

The enclosure with the cover come out to: ~36mm x 36mm x 12mm

