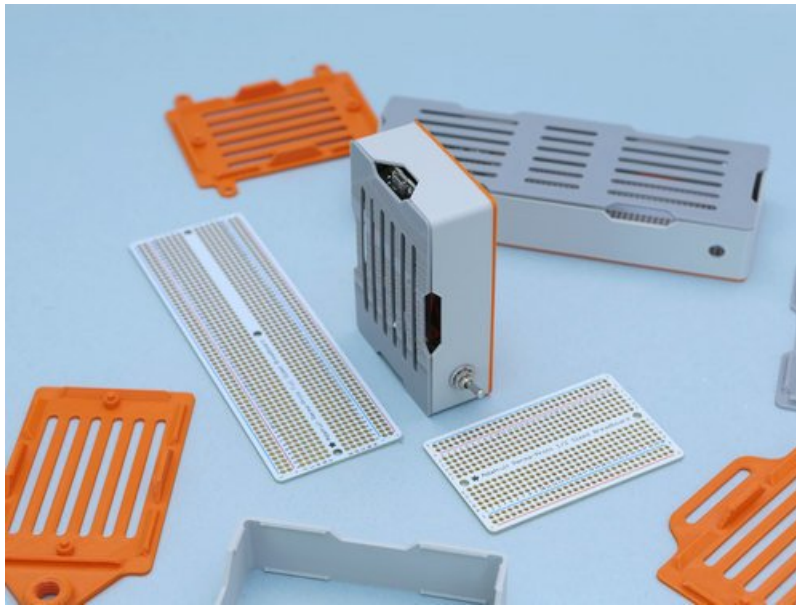


PermaProto Feather Case

Created by Ruiz Brothers



Last updated on 2020-07-22 06:55:28 PM EDT

Overview



Project Enclosures

3D print a snap fit case for an Adafruit Perma-Proto board. Perfect for using with an Adafruit Feather. Secures a full or half-size PermaProto PCB without any screws. Easy to make with free-support 3D printing.

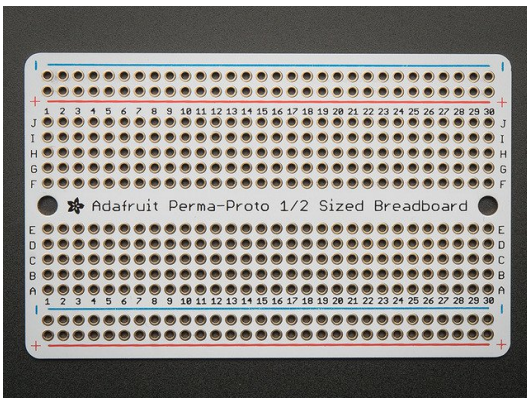


Mounting Plates

The snap fit covers feature M4 sized slots for attaching to surfaces and mounting additional components.

Project Enclosure

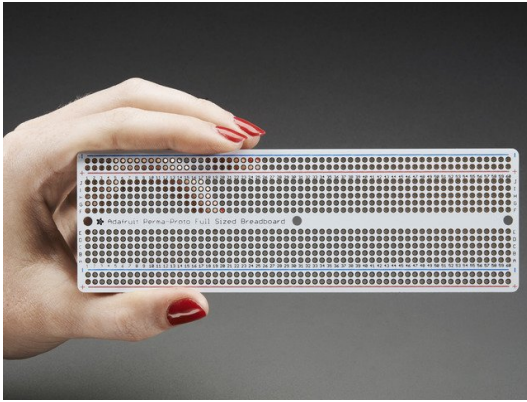
3D print a snap fit case for an Adafruit Perma-Proto board. Perfect for using with an Adafruit Feather. Secures a full or half-size PermaProto PCB without any screws. Easy to make with free-support 3D printing.



Adafruit Perma-Proto Half-sized Breadboard PCB - Single

\$4.50
IN STOCK

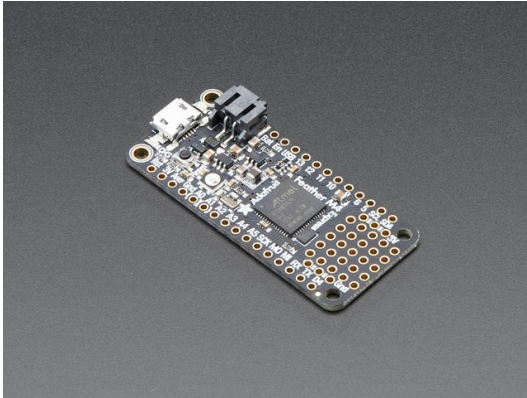
Add To Cart



Adafruit Perma-Proto Full-sized Breadboard PCB - Single

\$6.95
IN STOCK

Add To Cart



Adafruit Feather M4 Express - Featuring ATSAMD51

\$22.95
IN STOCK

Add To Cart



Mini Panel Mount SPDT Toggle Switch

\$0.95
IN STOCK

Add To Cart



Panel Mount 2.1mm DC barrel jack

\$2.95
IN STOCK

Add To Cart

1 x [Header Kit for Feather](#)

12-pin and 16-pin Female Headers

Out Of Stock

1 x [Male Headers](#)

36-pin Rainbow Combo 10 pack

Add To Cart

1 x [10-Wire Ribbon Cable](#)

silicone cover stranded-core

Add To Cart

3D Printing



Parts List

STL files for 3D printing are oriented to print "as-is" on FDM style machines. Parts are designed to 3D print without any support material. Original design source may be downloaded using the links below.

Full Size Version

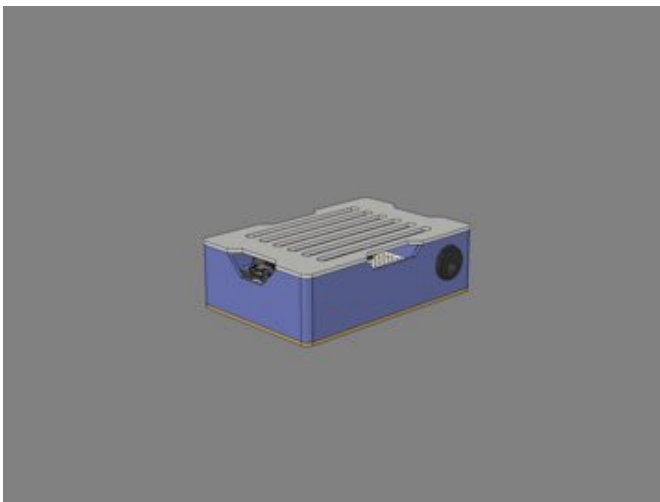
- case-fullsize.stl
- bottom-cover-fullsize.stl
- top-cover-fullsize.stl

Half Size Version

- case-halfsize.stl
- bottom-cover-halfsize.stl
- top-cover-halfsize.stl

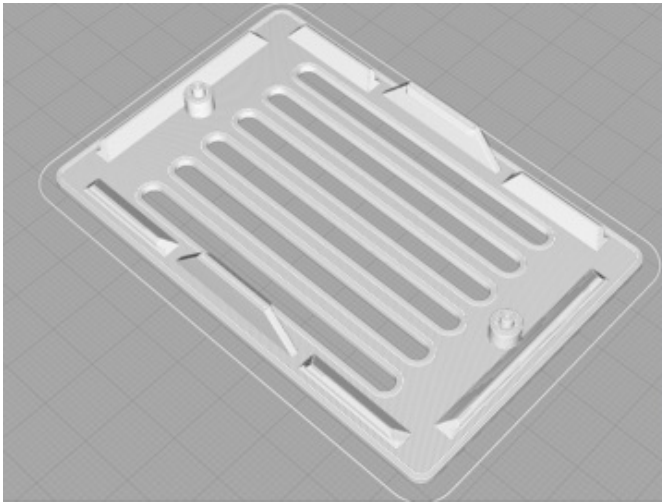
<https://adafru.it/MfZ>

<https://adafru.it/MfZ>



CAD Assembly

The Perma-Proto PCB is secured to the bottom cover using built-in tabs and standoffs. The case frame fits over the bottom cover. A DC jack and toggle switch is panel mounted to the case frame. The top cover snap fits over the the case frame.

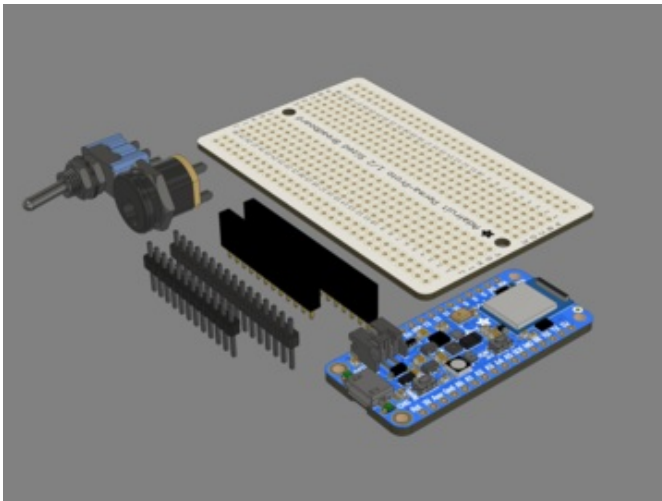


Slicing Parts

No supports are required. Slice with settings for PLA material.

The parts were sliced using CURA using the slice settings below.

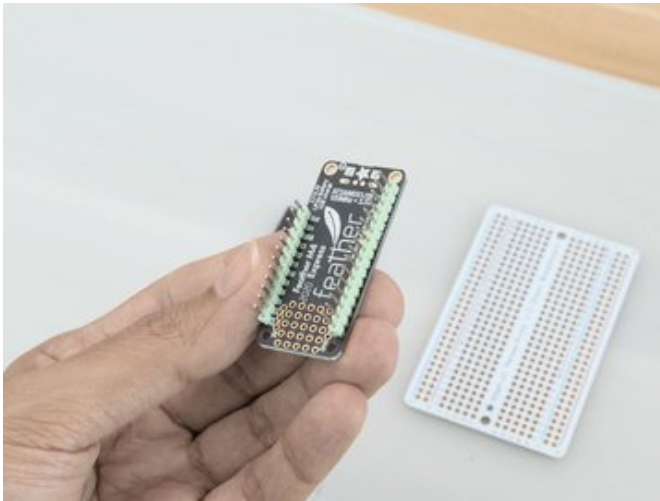
- PLA filament 220c extruder
- 0.2 layer height
- 10% gyroid infill
- 60mm/s print speed
- 60c heated bed



Design Source Files

The project assembly was designed in Fusion 360. This can be downloaded in different formats like STEP, STL and more. Electronic components like Adafruit's board, displays, connectors and more can be downloaded from the [Adafruit CAD parts GitHub Repo](https://github.com/adafruit/cad_parts) (<https://adafru.it/AW8>).

Assembly



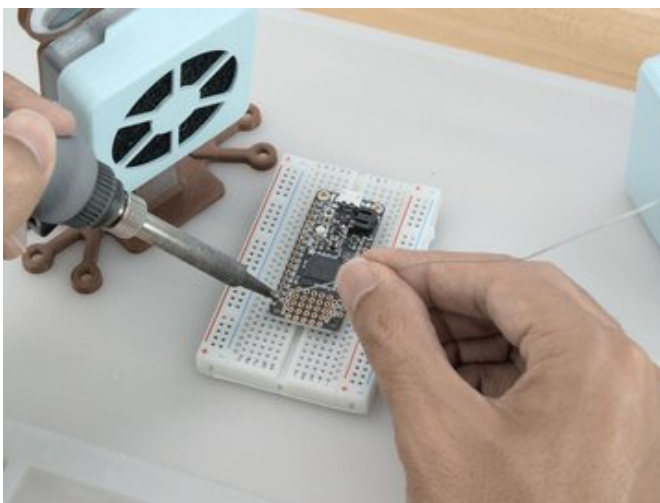
Install Headers

Insert a 12-pin and 16-pin strip of [male headers](https://adafru.it/MfR) (<https://adafru.it/MfR>) onto the bottom of the Feather. These will need to be soldered to the pins on the Feather.



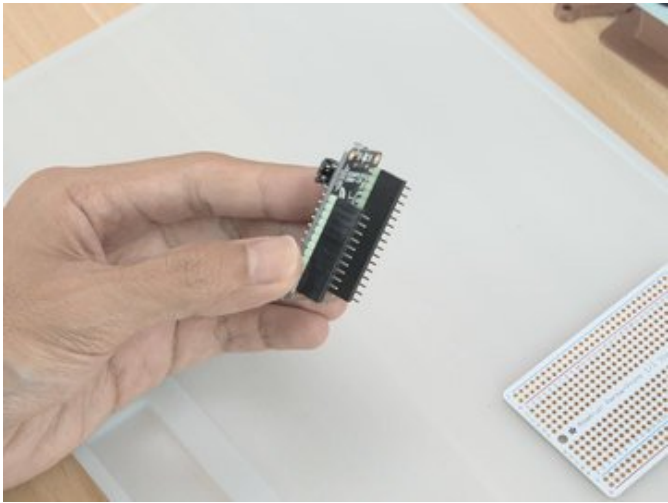
Breadboard Help

A [breadboard](https://adafru.it/keP) (<https://adafru.it/keP>) can be used to help keep the header pins nice and straight while soldering. The header pins are press into the breadboard.



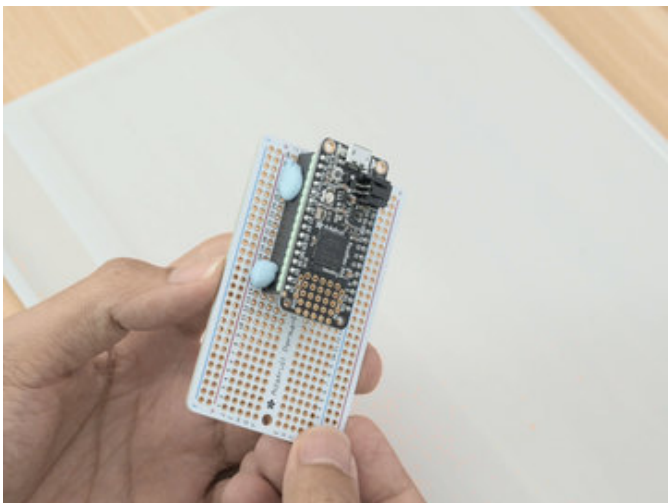
Solder Pins

Apply solder to all 28 pins on the Feather. A [silicone mat](https://adafru.it/MfS) (<https://adafru.it/MfS>) is also helpful and provides you with a nice grippy surface. A [USB solder fume extractor](https://adafru.it/MfT) (<https://adafru.it/MfT>) is used to keep smelly smoke away from your face and lungs.



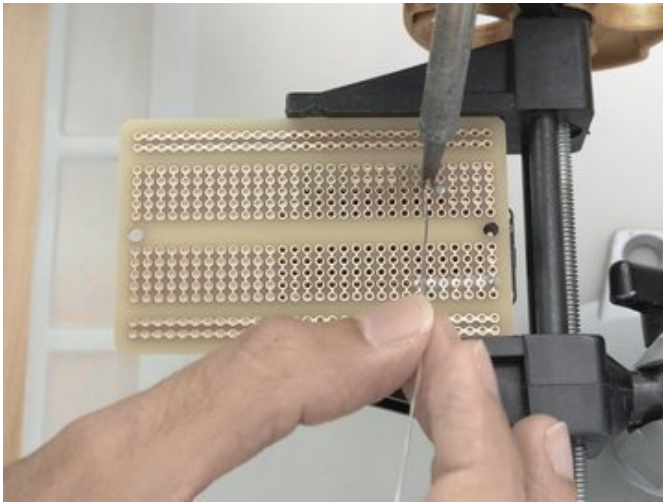
Install Female Headers

Insert a 12-pin and 16-pin female headers into the male header pins respectively. The female headers will need to be soldered to the Perma-Proto PCB.



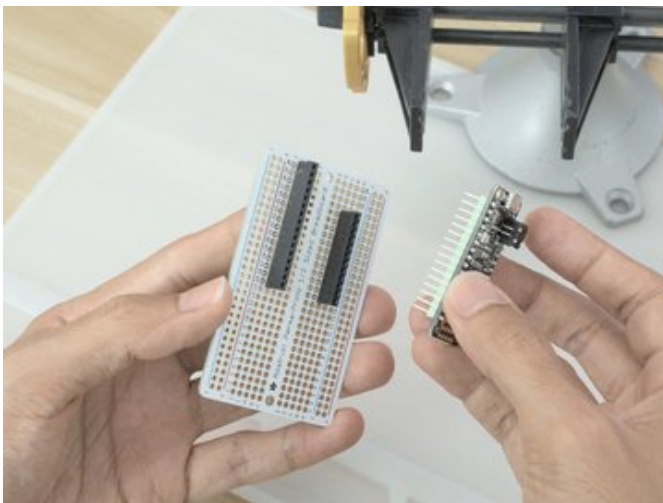
Install Headers to Perma-Proto

Place the headers onto the perma-proto PCB with the USB port close to the edge. Mounting tack can be used to temporarily secure the headers in place while soldering. Place a couple of pieces along side the headers and perma-proto PCB.



Solder Headers

Apply solder to the pins on the bottom of the PCB. A [panavise \(https://adafruit.it/dDJ\)](https://adafruit.it/dDJ) can help keep the PCB in place while solder. All of the holes are thru-plated and feature a nice gold finish so you won't get any oxidation.



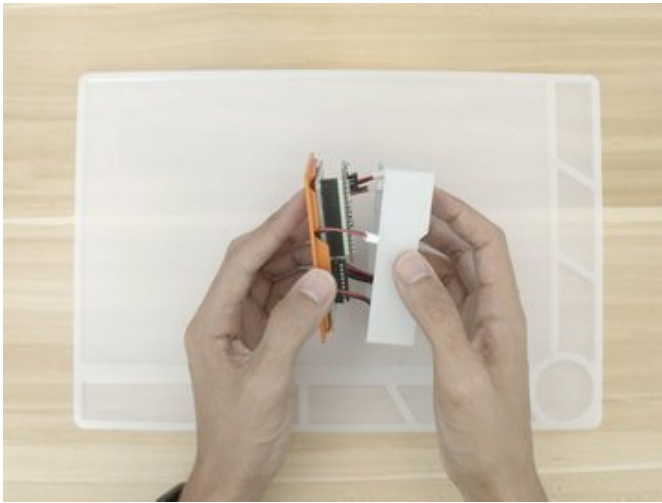
Remove Feather

Once all of the pins are soldered up we can remove the mounting tack. Be sure to inspect your solder joints and check to see all of the pins have enough solder.



Install Perma-Proto PCB

Place the PCB over the built-in standoffs. Insert the PCB at an angle to fit under one of the mounting tabs. Press down to snap fit into place. Fit wiring in between the snaps.



Install Case Frame

Place the case over the bottom cover and snap fit the edges together. The side with the notches are used to pass wires through.



Install Top Cover

Place the top cover over the case and line up the snaps. Firmly press down to snap fit cover. And there you have it! Your Perma-Proto Feather case is ready for action.

