



Case for HUSB238 Breakout

Created by Ruiz Brothers



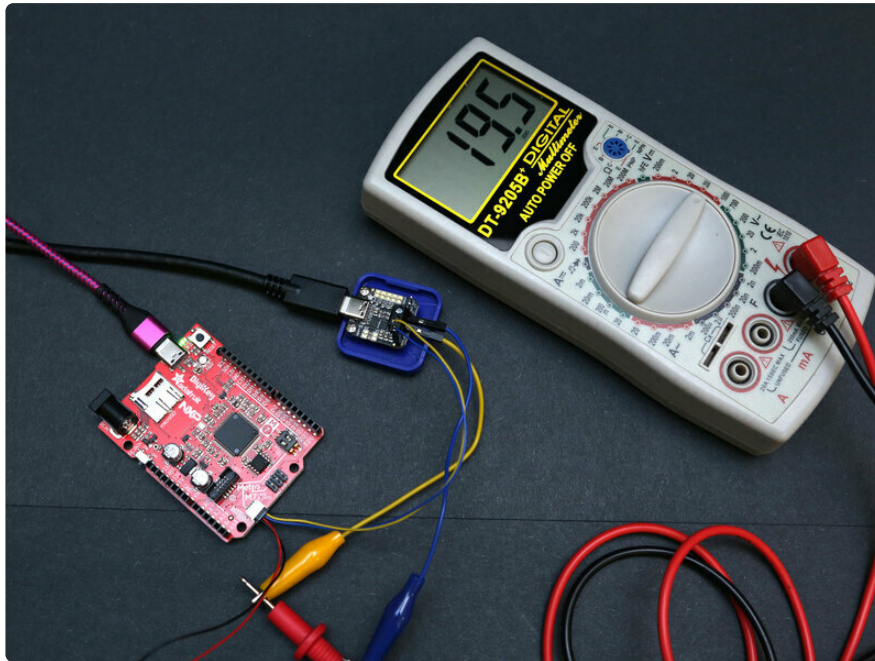
<https://learn.adafruit.com/case-for-husb238>

Last updated on 2024-06-03 03:55:57 PM EDT

Table of Contents

Overview	3
<ul style="list-style-type: none">• 3D Printed Case• Prerequisite Guides• Parts	
CAD Files	5
<ul style="list-style-type: none">• CAD Assembly• Build Volume• Design Source Files	
Assembly	6
<ul style="list-style-type: none">• Hardware• Secure HUSB238 Breakout• Installed Breakout• Snap Fit	
Use	8
<ul style="list-style-type: none">• The Wisdom of the Wall Wart• Solder the Jumpers• Which Wire is Which?	

Overview



3D Printed Case

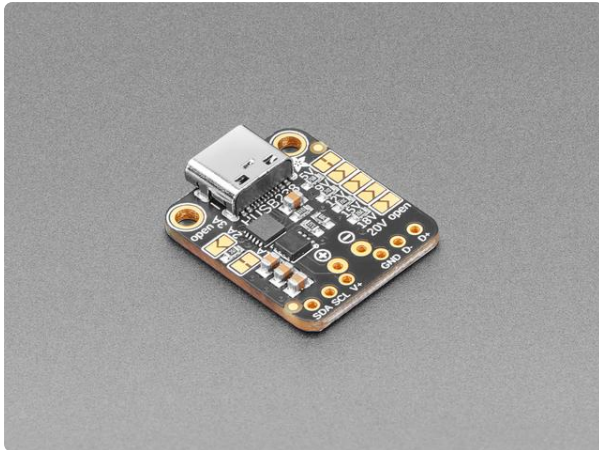
Make a protective snap fit case for the HUSB238 USB-C power breakout. The case features openings for the screw block terminals, USB-C port and voltage wires.

Prerequisite Guides

Take a moment to review the main product guide for pinouts, usage, and documentation.

- [Adafruit HUSB238 USB Type C Power Delivery \(https://adafru.it/199c\)](https://adafru.it/199c)

Parts



[Adafruit USB Type C Power Delivery Dummy Breakout - I2C or Fixed](https://www.adafruit.com/product/5807)

The HUSB238 USB PD sink chip is neat in that you can either use jumpers (really, resistor selection) to set the desired PD voltage and current or you can use I2C for dynamic...

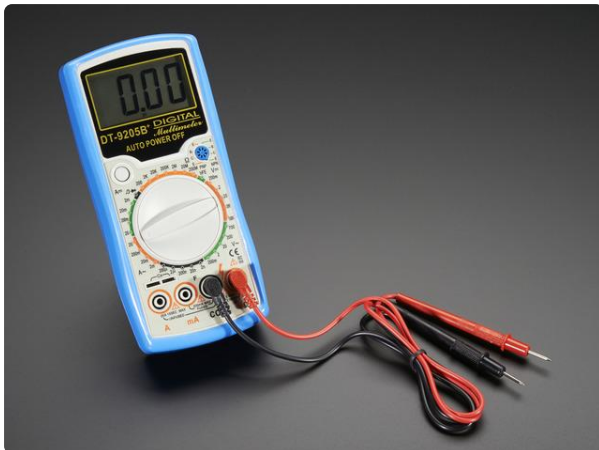
<https://www.adafruit.com/product/5807>



[USB C to USB C Cable - USB 3.1 Gen 4 with E-Mark - 1 meter long](https://www.adafruit.com/product/4199)

As technology changes and adapts, so does Adafruit! Rather than the regular USB A, this cable has USB C to USB C plugs! USB C is the latest...

<https://www.adafruit.com/product/4199>



[Digital Multimeter - Model 9205B+](https://www.adafruit.com/product/2034)

This massive multimeter has everything but the kitchen sink included. It's a great addition to any workbench or toolbox. It's low cost, simple to use, and has a big clear...

<https://www.adafruit.com/product/2034>

[1 x M2.5 x 6mm Machine Screws](https://www.amazon.com/gp/product/B076ZN18KZ/)

M2.5 Hardware Assortment Kit

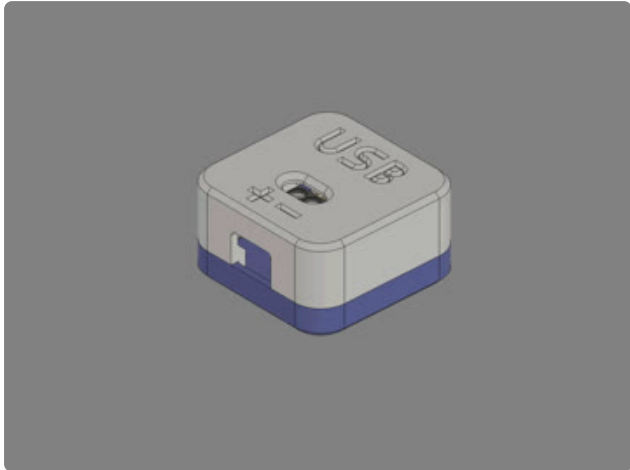
<https://www.amazon.com/gp/product/B076ZN18KZ/>

[1 x USB PD Power Supply](https://www.amazon.com/dp/B0C4DGBHY2?psc=1&ref=ppx_yo2ov_dt_b_product_details)

USB PD power supply capable of outputting the voltage you want to request with the HUSB238 breakout

https://www.amazon.com/dp/B0C4DGBHY2?psc=1&ref=ppx_yo2ov_dt_b_product_details

CAD Files



CAD Assembly

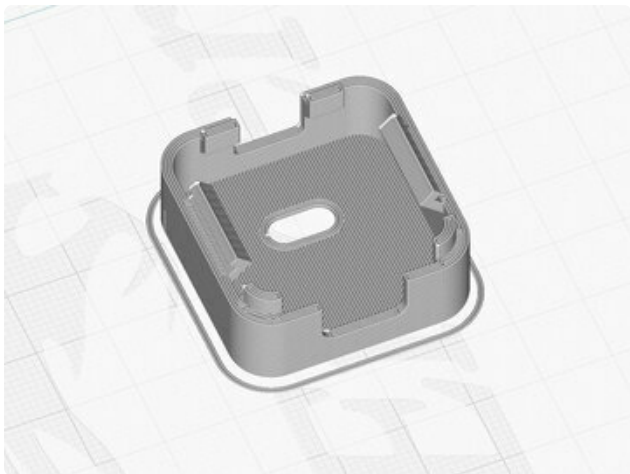
The breakout is secured to the bottom cover using two M2.5 x 6mm long screws. The top cover snap fits over the base. Cutouts for the USB-C port, screw-block terminals and wires are available in the top cover.

[Download CAD Source](#)

<https://adafru.it/199e>

[Download STLs.zip](#)

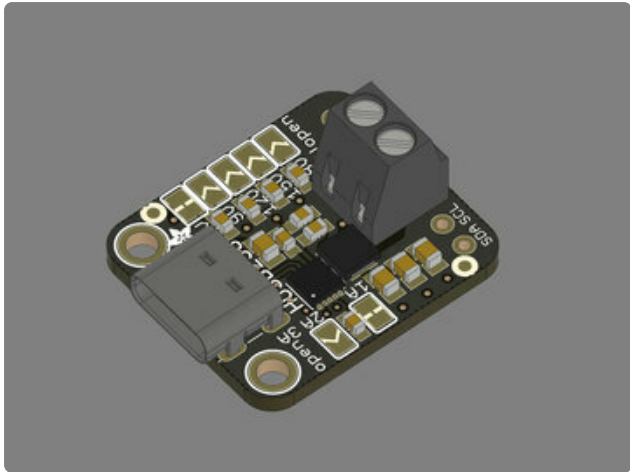
<https://adafru.it/199A>



Build Volume

The parts require a 3D printer with a minimum build volume.

34mm (X) x 34mm (Y) x 16mm (Z)

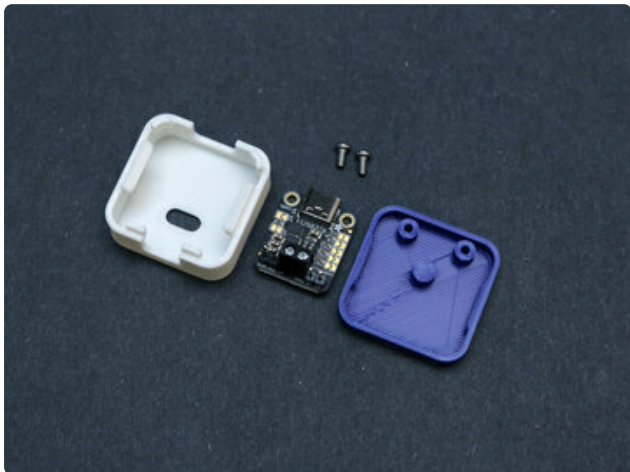


Design Source Files

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 boards, displays, connectors and more can be downloaded from the [Adafruit CAD parts GitHub Repo \(https://adafru.it/RvF\)](https://adafru.it/RvF).

Assembly



Hardware

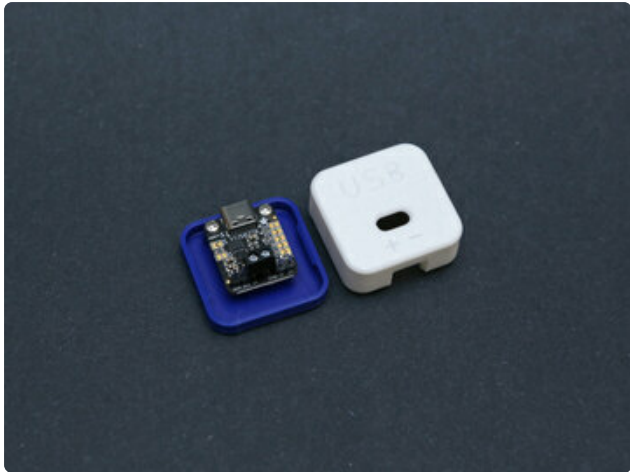
Use two M2.5 x 6mm long steel machine screws to secure the HUSB Breakout to the bottom cover.



Secure HUSB238 Breakout

Place the PCB over the bottom cover and line up the mounting holes.

Insert and fasten the machine screws to secure the breakout.



Installed Breakout

Orient the top cover with the HUSB238 breakout so USB label is aligned with the USB-C port.

Snap Fit

Place the top over the bottom and firmly press them together.

To open, squeeze the sides of the top and pull part.



Use



We all want to USB-C all the things, but how do you do that? There are a few things to keep in mind so that you can use the convenience of USB-C power safely.

The Wisdom of the Wall Wart



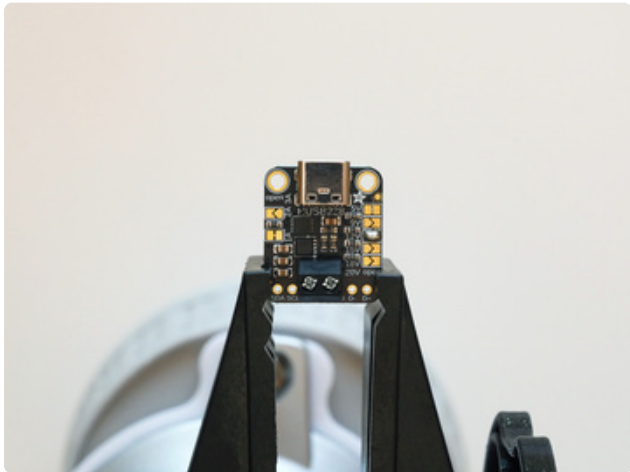
Check the information on the DC wall wart. This supply is outputting 12 volts and 1 amp, which the HUSB238 can request from a USB PD supply.

Additionally, you'll want to look at the [polarity symbol \(https://adafru.it/199B\)](https://adafru.it/199B) on the power supply to see if the DC jack is center negative or center positive. This supply is center positive.



After you confirm that the HUSB238 can request the needed voltage and amps from a USB PD supply, cut and splice the power cable from the DC wall wart.

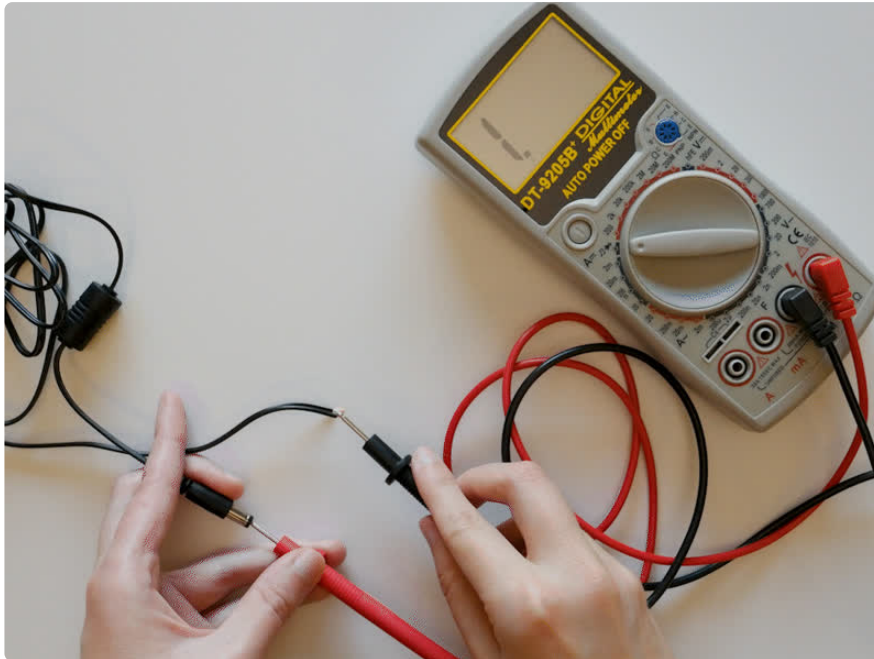
Solder the Jumpers



The HUSB238 voltage and amps can be set with jumpers, as described on the [product guide Pinouts page \(https://adafruit.it/199C\)](https://adafruit.it/199C). If you need a voltage higher than 5V, then you will need to cut the 5V jumper. If you need more amps than 1A, you will need to cut the 1A jumper.

For the supply on this page that needs 12V/1A, the 5V jumper was cut and the 12V jumper was soldered closed. The 1A jumper can remain connected.

Which Wire is Which?



You'll want to confirm the polarity of the wires with a multimeter using continuity mode.

If your power supply was **center negative**, the outside of the DC jack will have continuity with the positive wire and the center of the DC jack will have continuity with the ground wire.

If your power supply was **center positive**, like the one on this page, the outside of the DC jack will have continuity with the ground wire and the center of the DC jack will have continuity with the positive wire.



Once you know the polarity of the wires, you can secure the positive wire in the positive terminal block and the ground wire in the ground terminal block.

Connect the HUSB238 to a USB PD supply with a USB-C cable. Then power up your new USB-C powered device!

