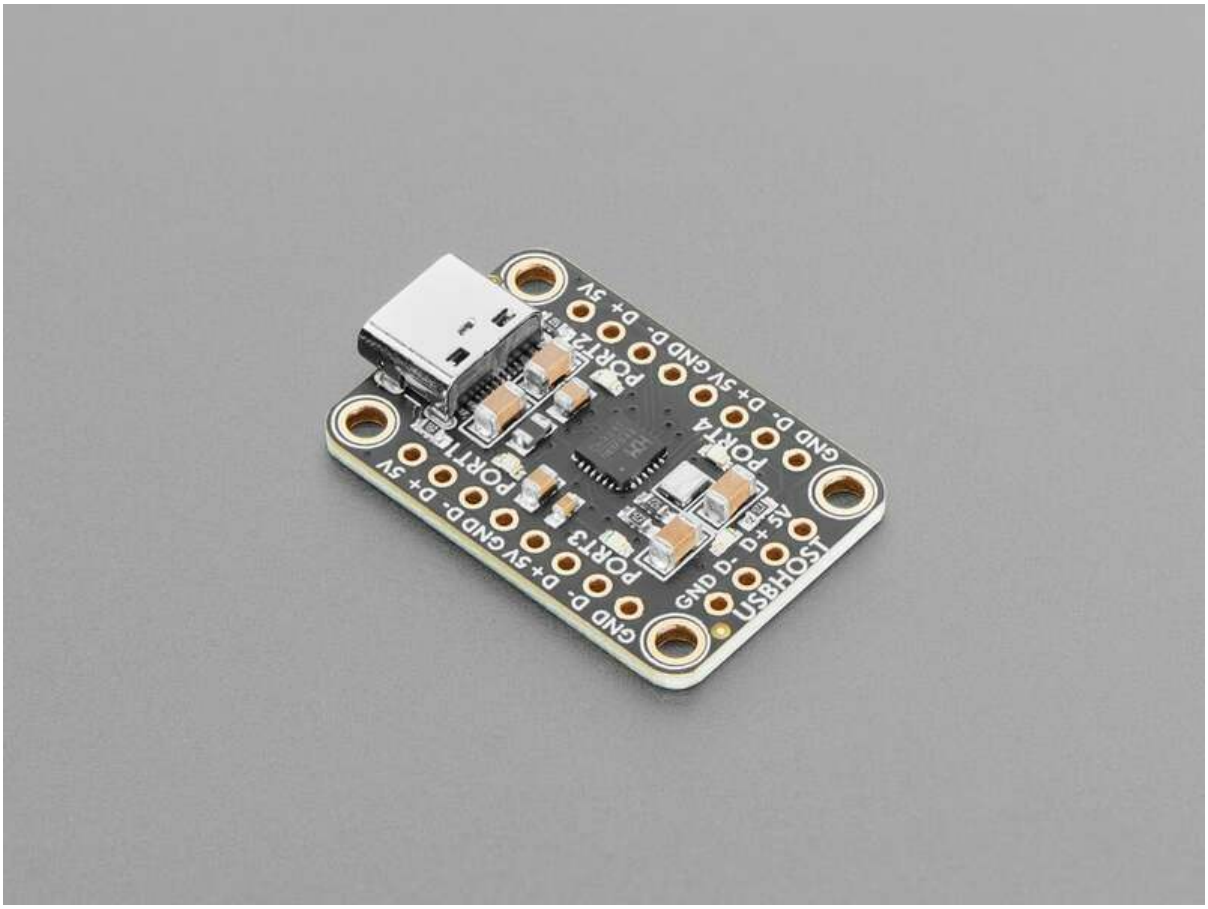
Adafruit CH334F Mini USB Hub Breakouts

Created by Liz Clark



https://learn.adafruit.com/adafruit-ch334f-mini-4-port-usb-hub-breakout

Last updated on 2024-10-15 12:00:22 PM EDT

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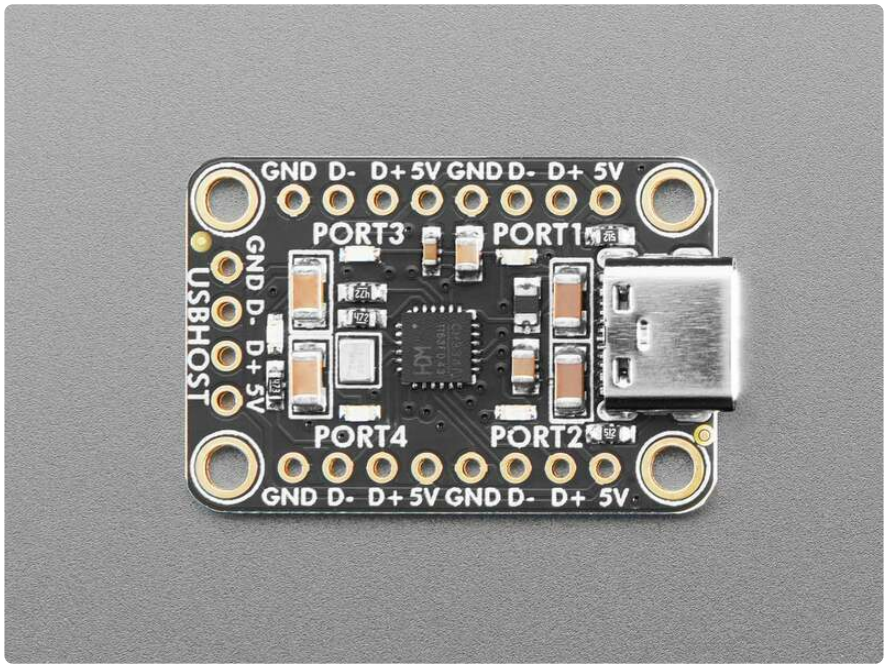
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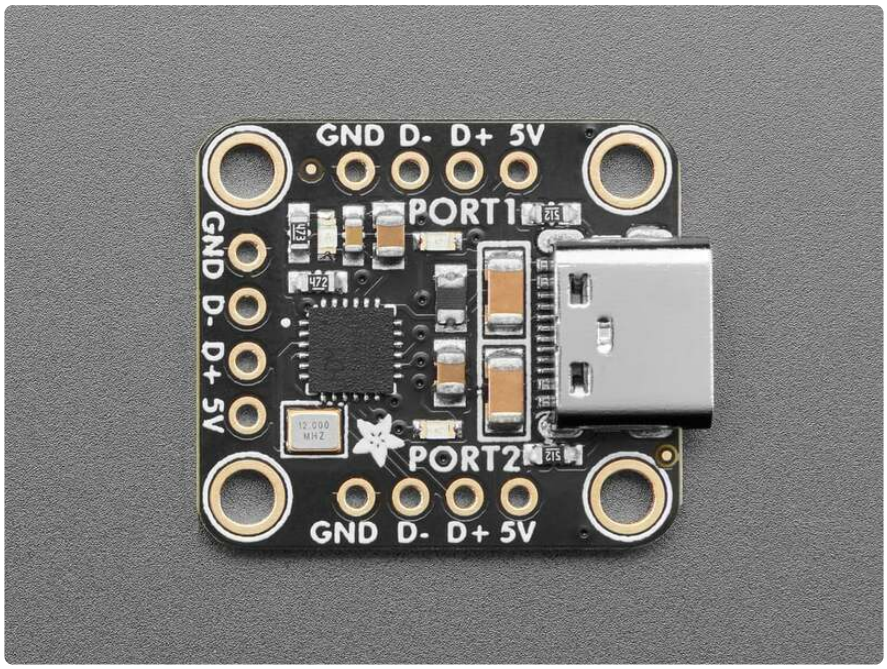
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Overview

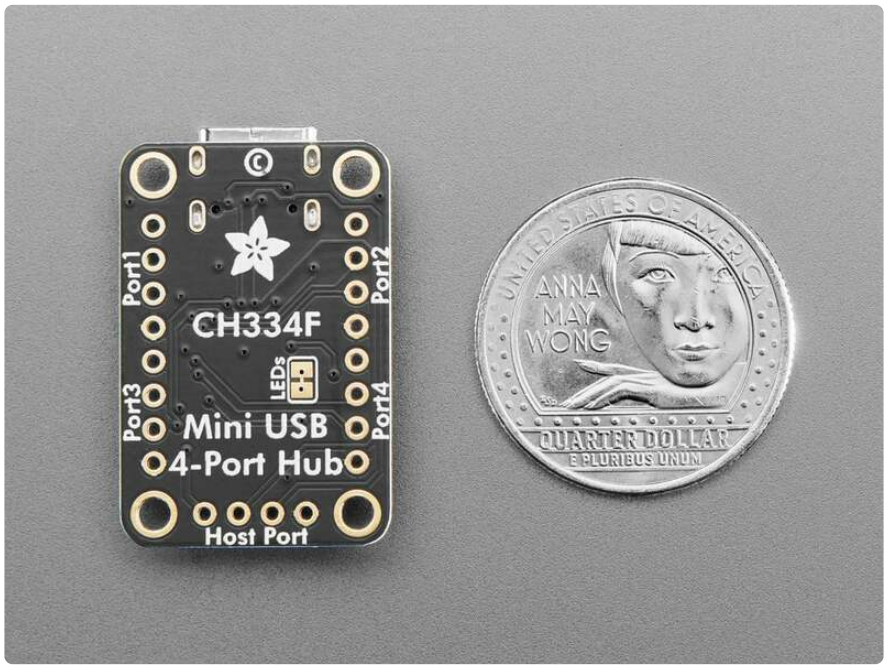


Sometimes you've got something with USB host, like a embedded Linux board, and you want to connect more than one thing. Or maybe you want to turn something like a keyboard into a multi-device USB peripheral. The **Adafruit CH334F Mini USB Hub Breakouts** will do that for you! It features a CH334F USB 2.1 hub chip which converts one high-speed port into four in the four port version (http://adafru.it/5997) and two in the two port version (http://adafru.it/5999).

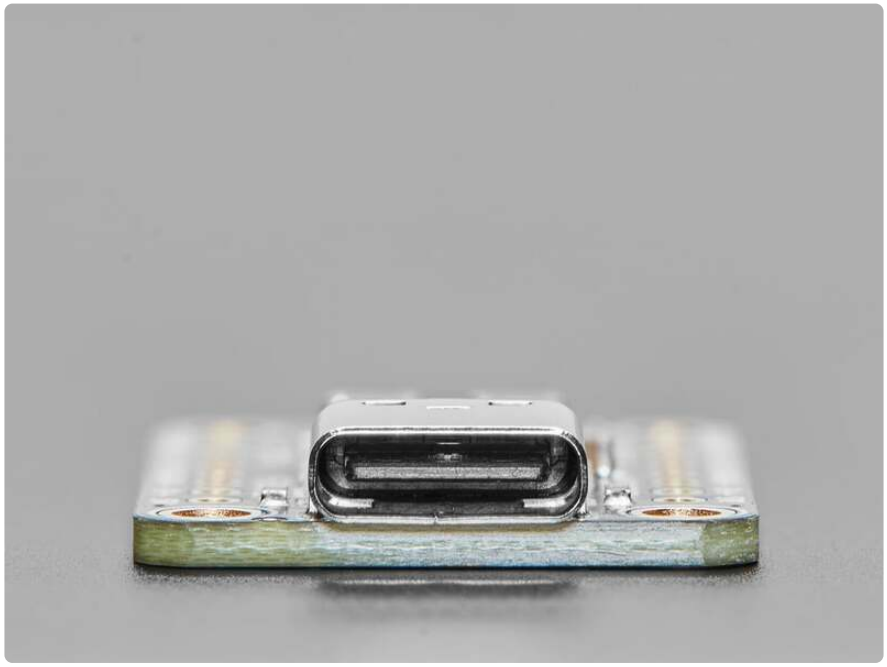


Most folks who use a USB hub get one that comes in an enclosure with connectors or cables included. But, those hubs are going to be bulky - they're meant for external

use. This breakout board is designed to be compact, so it can easily be embedded into an enclosure or existing device. There's four mounting holes but other than that, we tried to keep it as compact as possible.

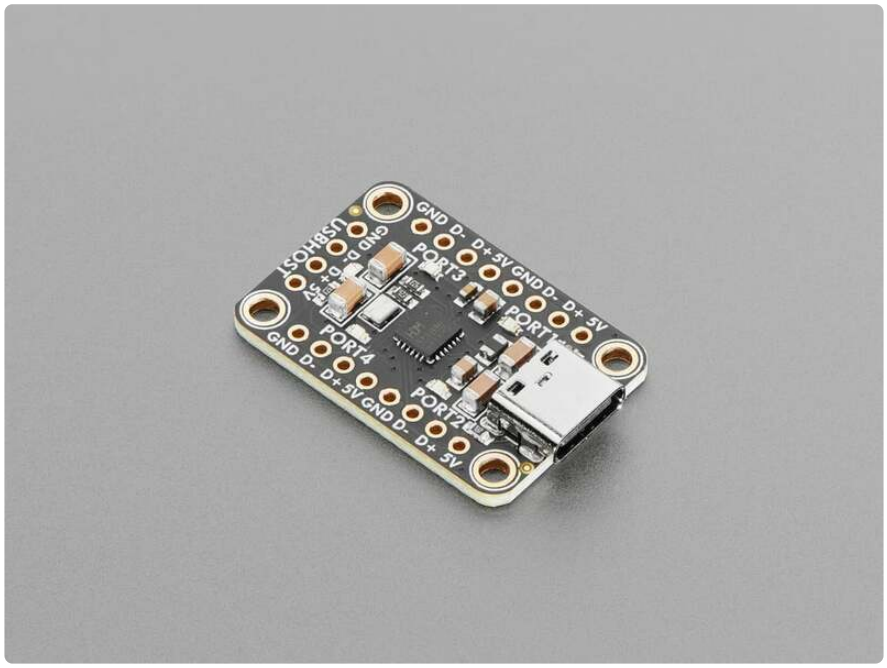


Part of how we kept it small is not including downstream ports! The breakout has either 0.1" header or USB C for the upstream, and then four 4-pin ports for peripheral connections. We expect folks to solder directly to the pads or use our 'simple' USB-breakout cables (http://adafru.it/4449).

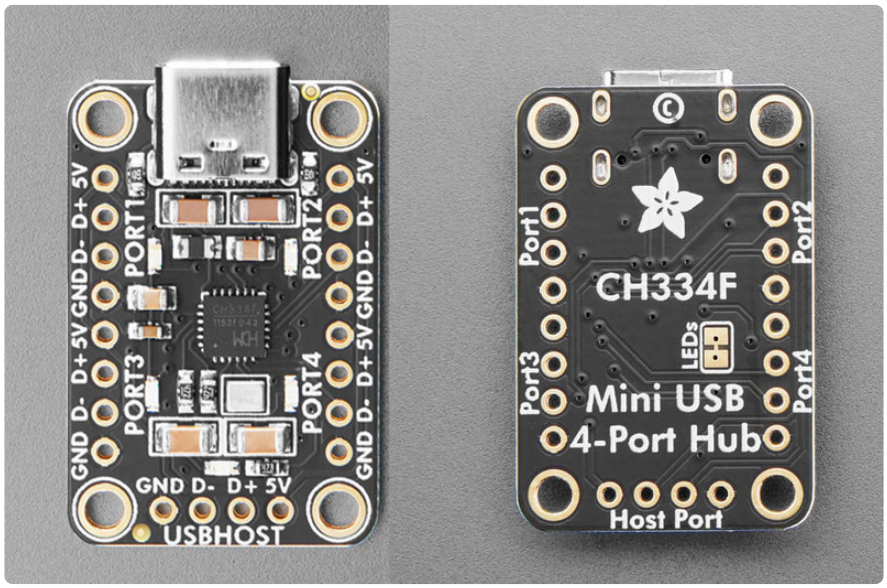


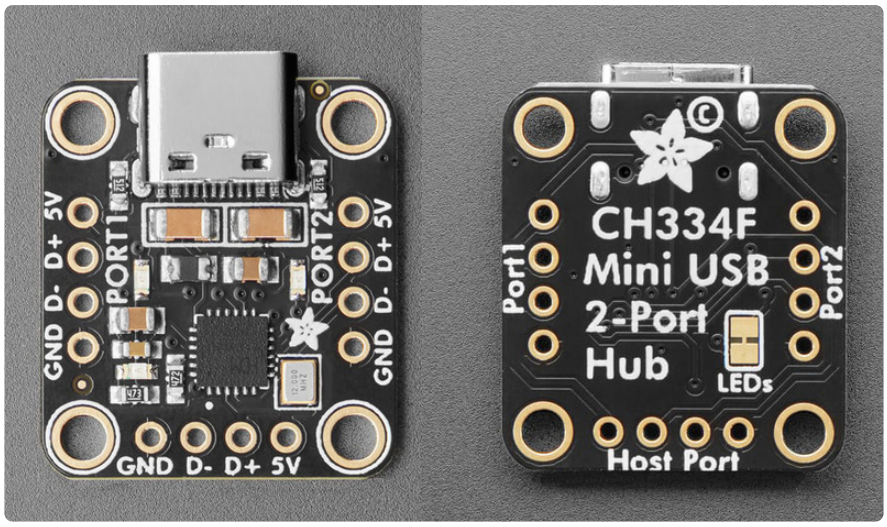
You get one fully assembled/tested board and some extra header if you happen to want to plug it into a breadboard. Other than that, just keep in mind there are no USB

ports for the downstreams - if you need those, take a look at some of the other hubs we stock (https://adafru.it/1a4q).



Pinouts





This page covers both the 4-Port and 2-Port versions of the CH334F breakouts. The pinout functionality is the same for both. The only difference is the number of downstream ports.

USB Host

- **USB C Port** - At the top edge of the board is a USB C port. This port can act as the USB host for the CH334F hub.
- **USB Host Pins** - At the bottom edge of the board are the broken out pins for the CH334F USB host input, labeled **USBHOST** on the board silk. You can use these pins instead of the USB C port for the USB host connection. The following pins are available:
    - **5V** - 5V power input
    - **D+** - Positive data
    - **D-** - Negative data
    - **GND** - common ground for power and logic

Downstream Port Pins

The CH334F breakout has four available downstream USB ports on the 4-Port version (http://adafru.it/5997) and two available ports on the 2-Port version (http://adafru.it/5999). They are labeled **PORT1**, **PORT2**, **PORT3** and **PORT4** on the board silk. Each port has the following connections available:

- **5V** - 5V power output
- **D+** - Positive data

- **D-** - Negative data
- **GND** - common ground for power and logic

Status LEDs and LEDs Jumper

- **LEDs** - Each of the USB ports, the downstream ports and the USB host port, have a green LED. The LEDs for the downstream ports are located above the **PORT** label on the board silk. The USB host LED is located above the breakout pins at the bottom of the board. These LEDs indicate the status of each port. If the LED is on, it shows that the port is active.
- **LEDs Jumper** - On the back of the board, above the Mini USB Hub label on the board silk is the jumper for the LEDs. It is labeled **LEDs** on the board silk. Cut this jumper to disable the green LEDs.

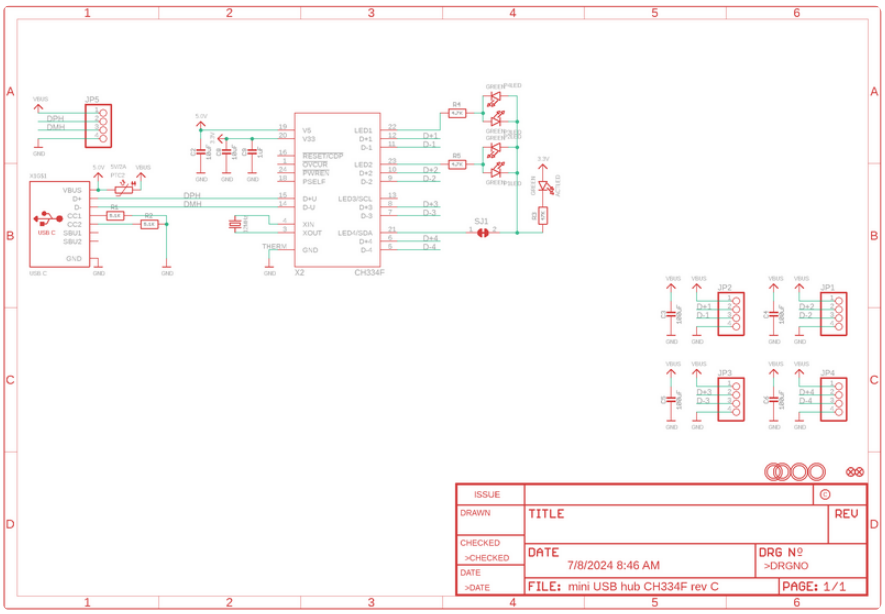
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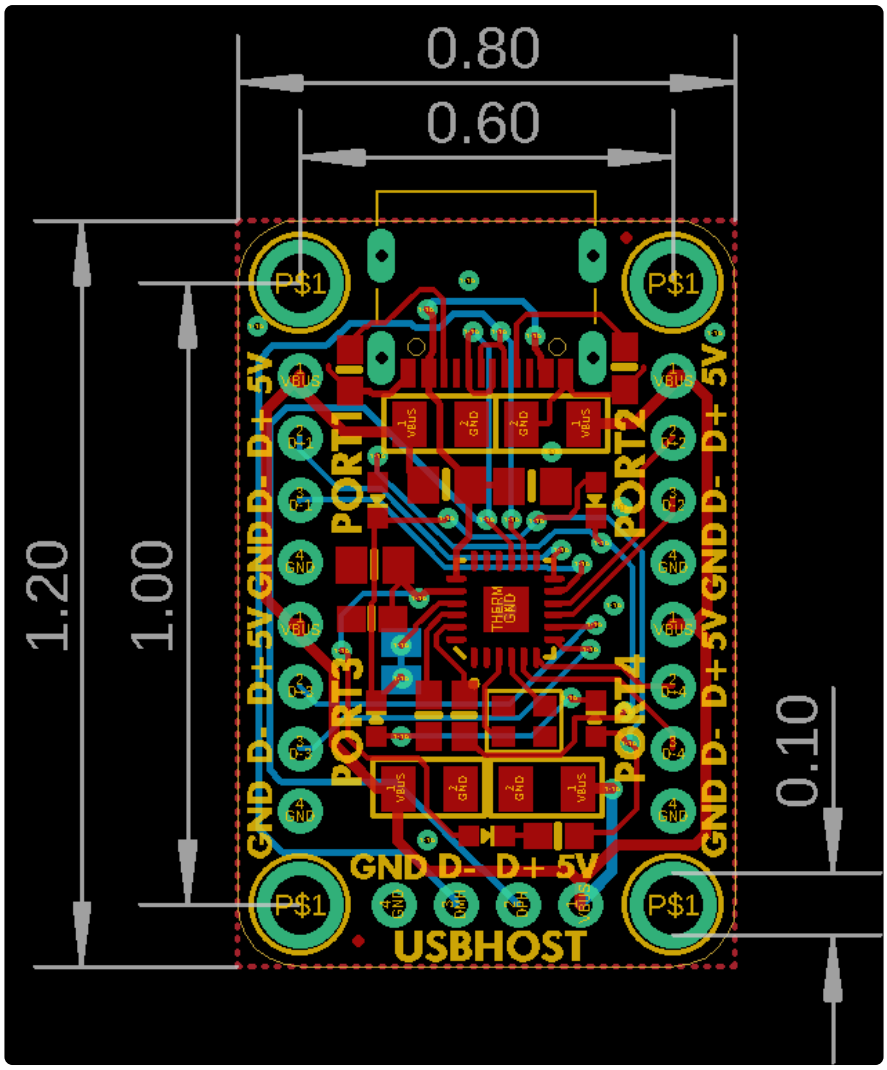
Files

- CH334F Datasheet (https://adafru.it/1a4r)
- EagleCAD PCB Files on GitHub (https://adafru.it/1a4s)
- 2-Port Hub 3D model on GitHub (https://adafru.it/1a8E)
- 4-Port Hub Fritzing object in the Adafruit Fritzing Library (https://adafru.it/1a4t)
- 2-Port Hub Fritzing object in the Adafruit Fritzing Library (https://adafru.it/1a5i)

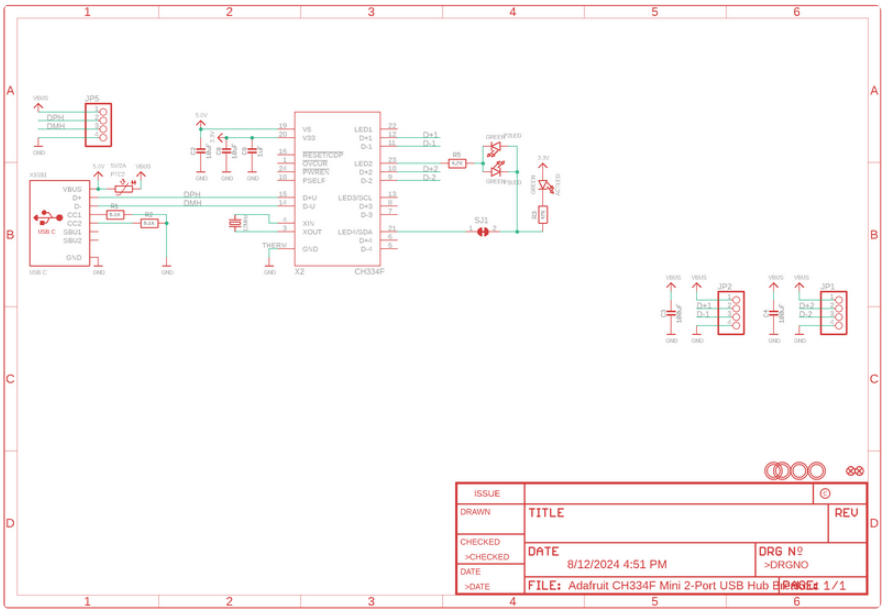
Schematic and Fab Print

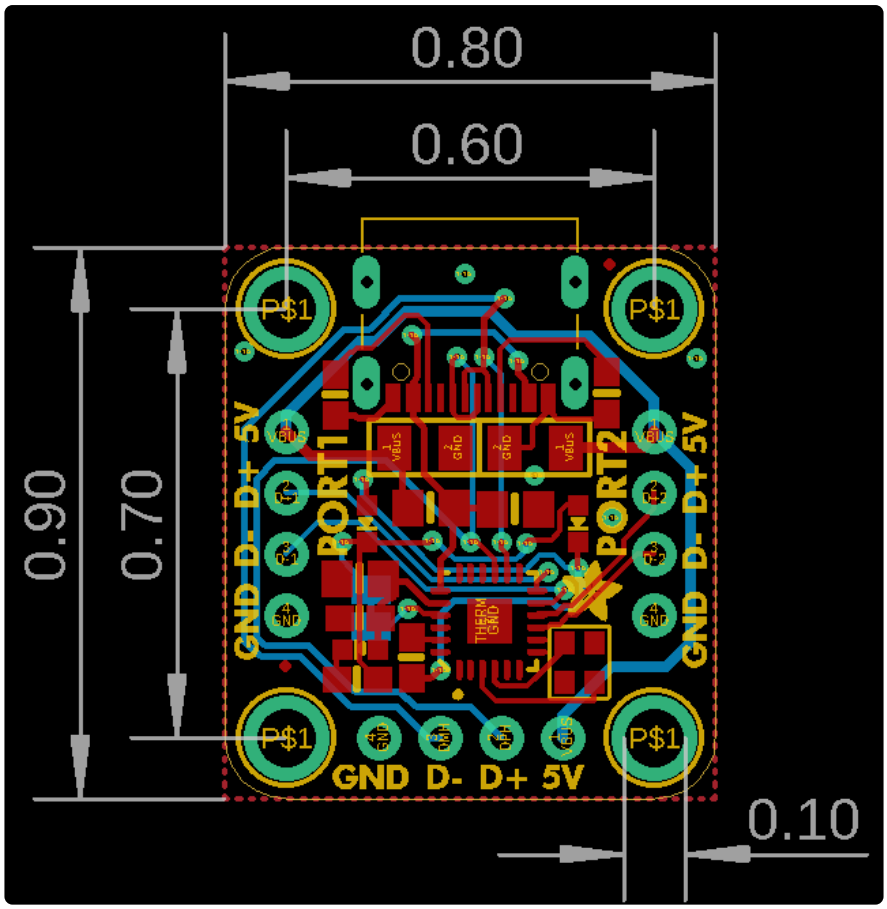
4-Port Hub

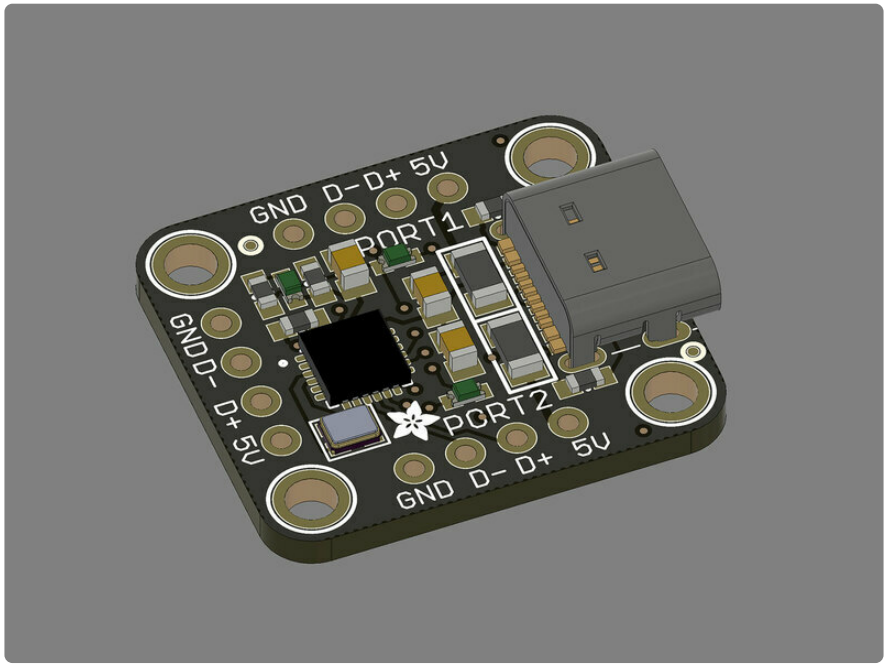



0.80
0.60
1.20
1.00
0.10
P$1
P$1
P$1
P$1
PORT1
PORT2
PORT3
PORT4
THERM
GND
GND D- D+ 5V
GND D- D+ 5V
GND D- D+ 5V
GND D- D+ 5V
USBHOST

2-Port Hub


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0.80
0.60
0.90
0.70
0.10
P$1
P$1
P$1
P$1
PORT1
PORT2
GND D- D+ 5V
GND D- D+ 5V
GND D- D+ 5V
GND D- D+ 5V


GND D- D+ 5V
PORT1
GND D- D+ 5V
PORT2
GND D- D+ 5V