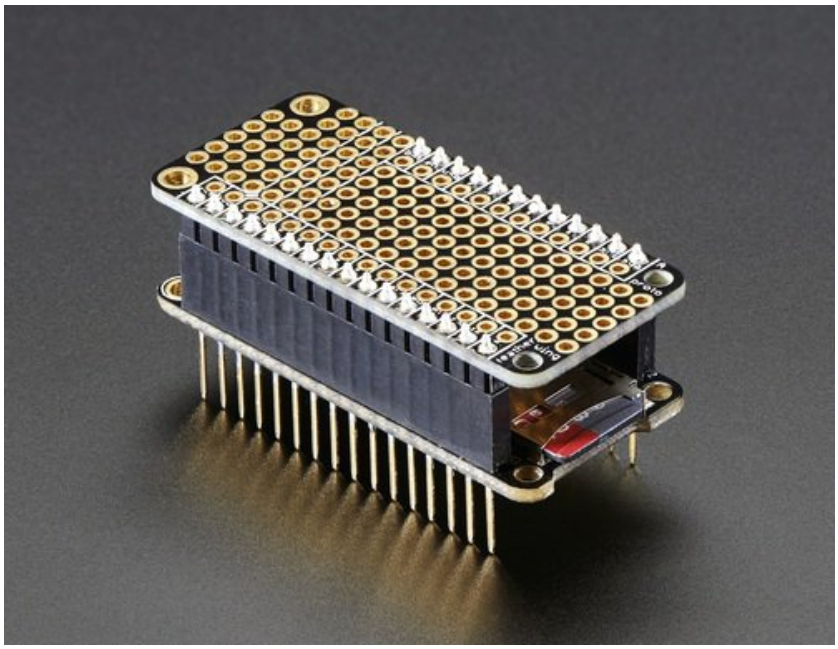
FeatherWing Proto, Doubler and Tripler

Created by lady ada



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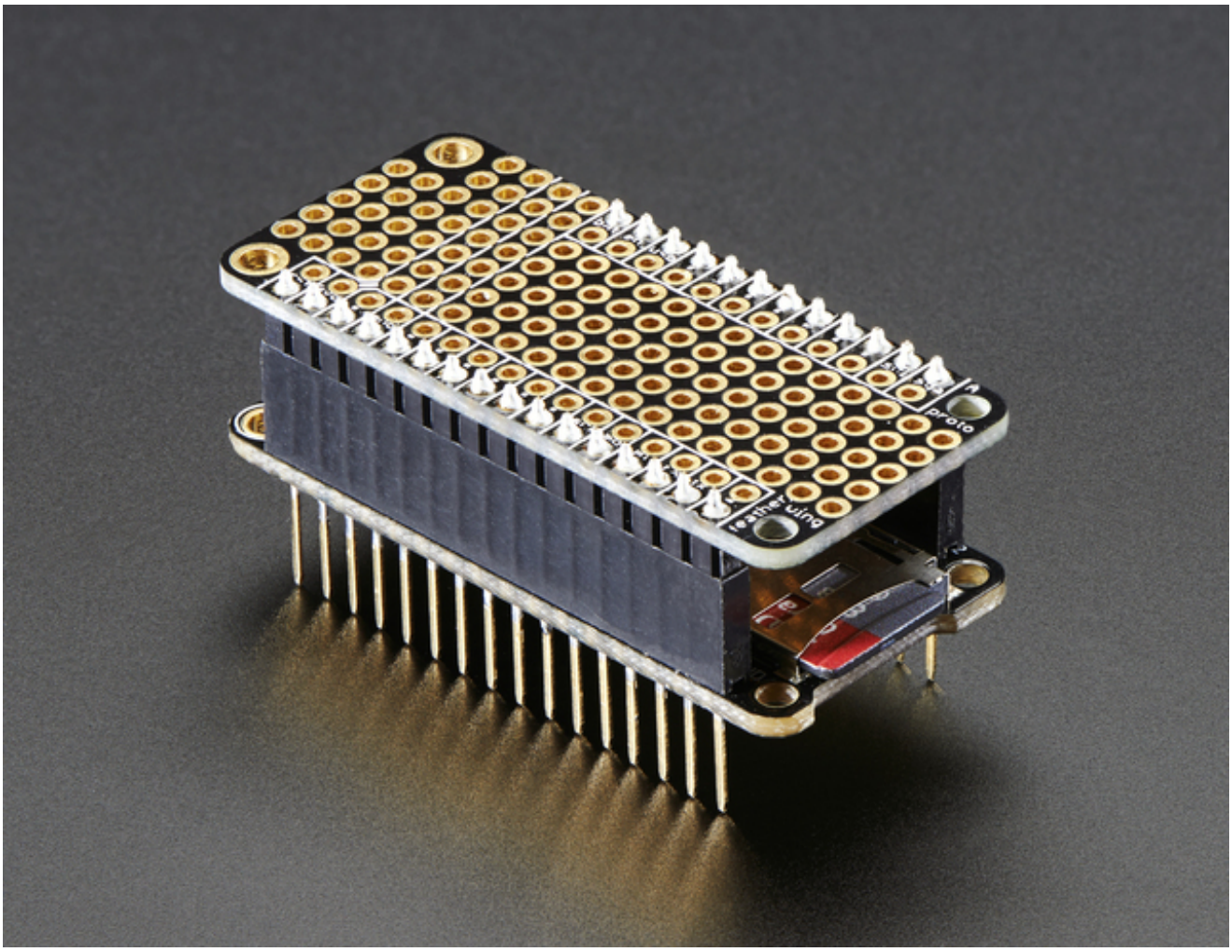
Guide Contents

Overview

Once you've got your Feather board up and running you probably want to have some custom circuiry attached. Of course, you can start with a breadboard setup and that will work just fine for prototyping. But, once you know what you want, a proto feather can keep the components compact and secure.

We have *three options* for prototyping, all are "FeatherWings" - add on boards that can be plugged right into any Feather.

FeatherWing Proto

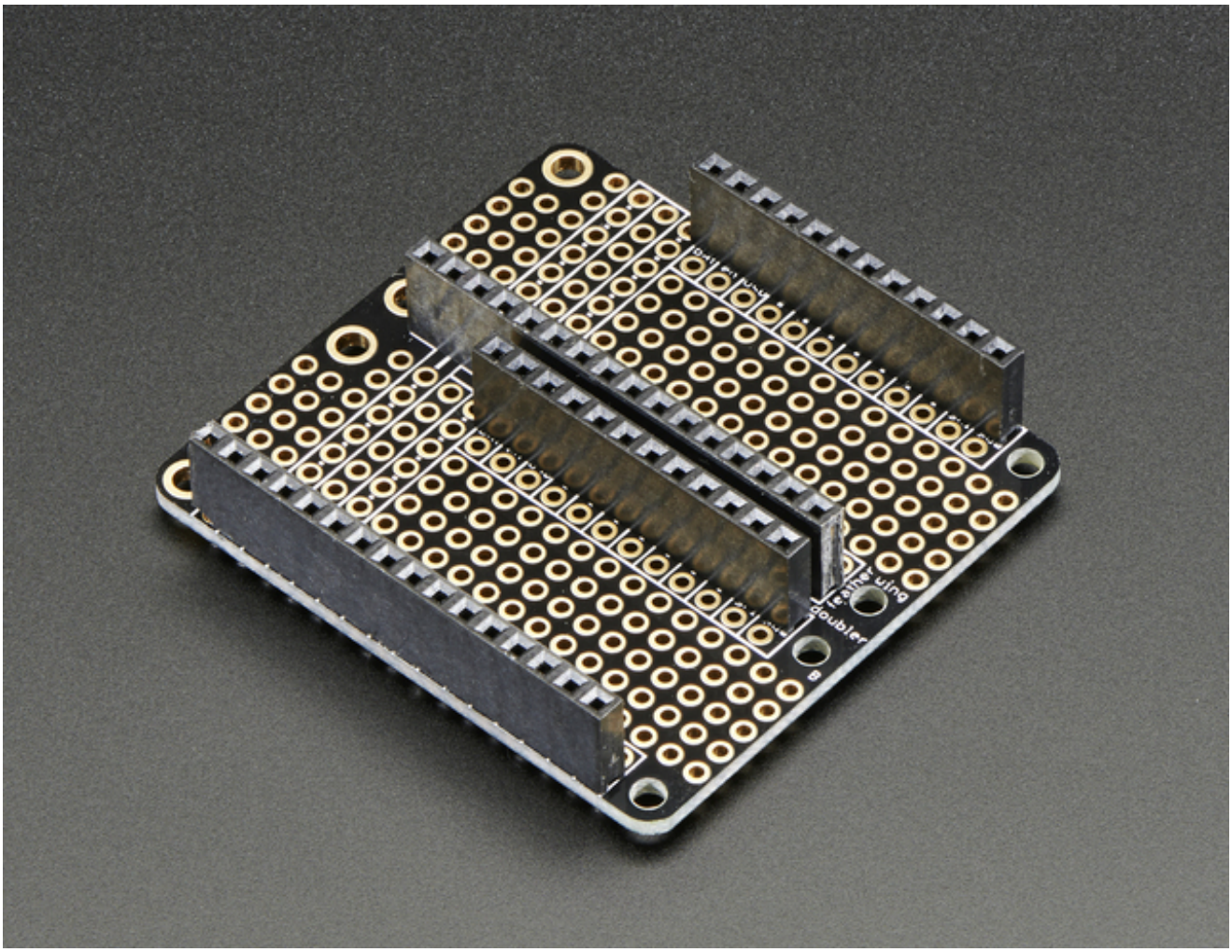


First is the **FeatherWing Proto** - a prototyping add-on for all Feather boards. Using our Feather Stacking Headers (http://adafru.it/2830) or Feather Female

Headers (http://adafru.it/2886) you can connect a FeatherWing on top or bottom of your Feather board.

This has a duplicate breakout for each pin on a Feather, as well as a bunch of plain grid proto holes. For GND and 3.3V, we give you a strip of connected pads. There's plenty of room for buttons (http://adafru.it/dSh), indicator LEDs (http://adafru.it/dLA), or anything for your portable project. The FeatherWing Proto makes an ideal partner for any of our Feather boards.

FeatherWing Doubler



If you need even more space, or maybe you want to have two wings plugged in at once, you can double your prototyping space with a FeatherWing Doubler. Using our Feather Stacking Headers (http://adafru.it/2830) or Feather Female Headers (http://adafru.it/2886) you can connect a FeatherWing on top or bottom of your Feather board.

This design also has duplicate breakout for each pin on a Feather, as well as a bunch of

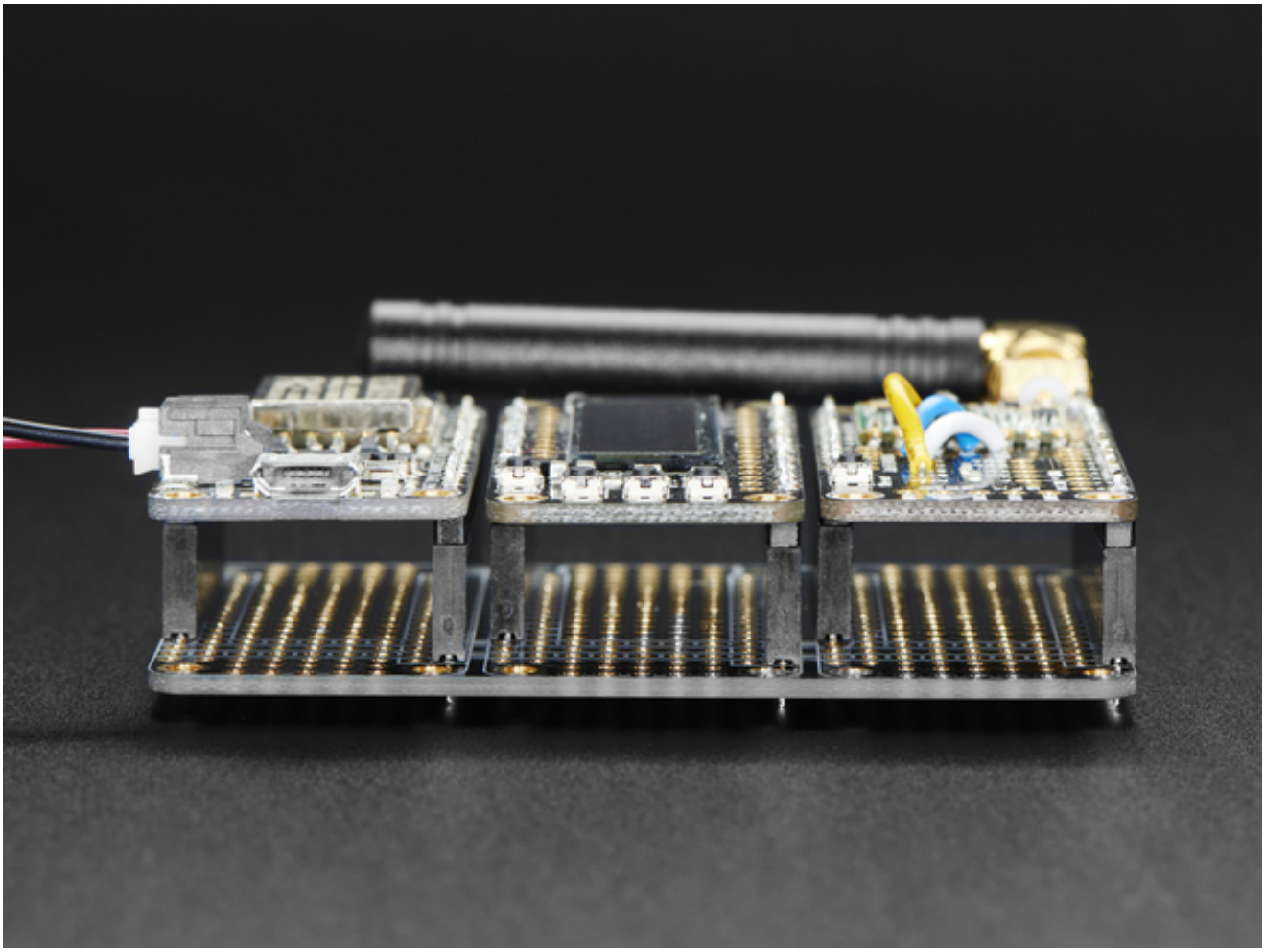
plain grid proto holes. For GND and 3.3V, we give you a strip of connected pads. The I/O pins are 'connected through' between the two sides with skinny 10mil thick traces that pass through the 0.1" grid holes so you can plug a Feather into one side and you get a fully connected set of headers on the other side

FeatherWing Tripler

Need MOAR space? Get 50% more than a Doubler with the Tripler!

This is similar to our FeatherWing Proto (http://adafru.it/2884) except there are three! The magic of the Tripler comes when you want to connect your Feather to two other Feather Wings without needing any stacking headers!

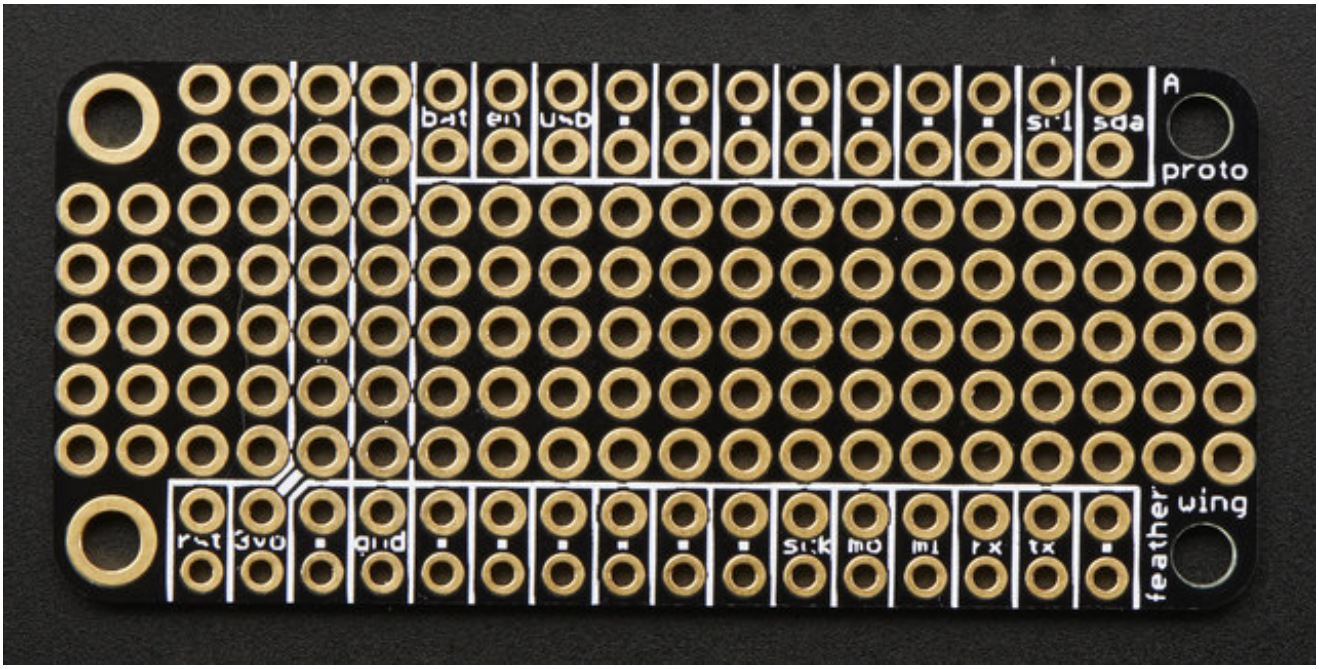
This design also has duplicate breakouts for each pin on a Feather, as well as a bunch of plain grid proto holes. For GND and 3.3V, we give you a strip of connected pads. The I/O pins are 'connected through' between the two sides with skinny 10mil thick traces that pass through the 0.1" grid holes so you can plug a Feather into one side and you get two fully connected sets of headers on the other side



Proto Pinout

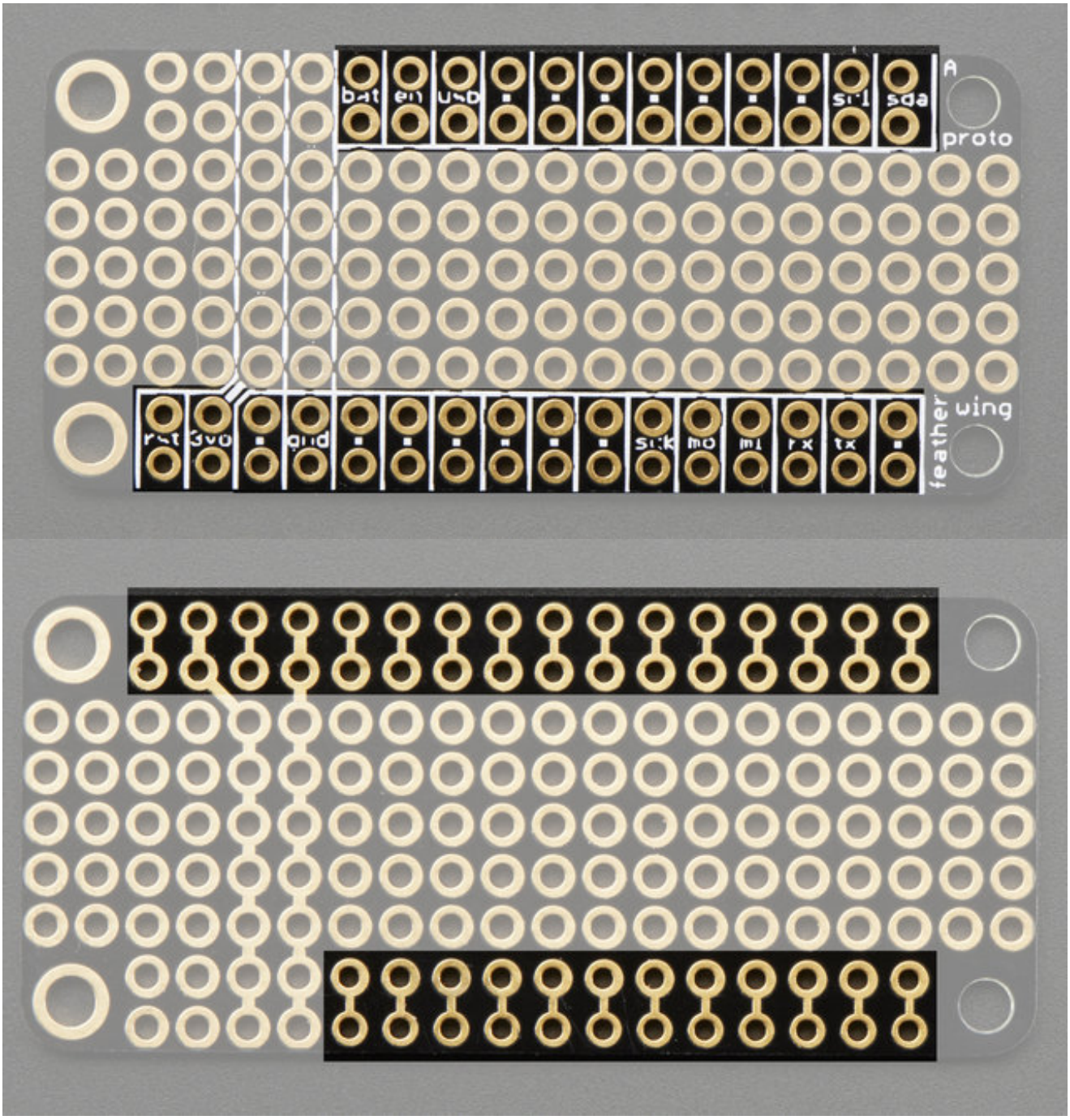
Proto Pinout

The Proto Featherwing is fairly simple. It's 2.0" x 0.9" so it fits right over a feather.



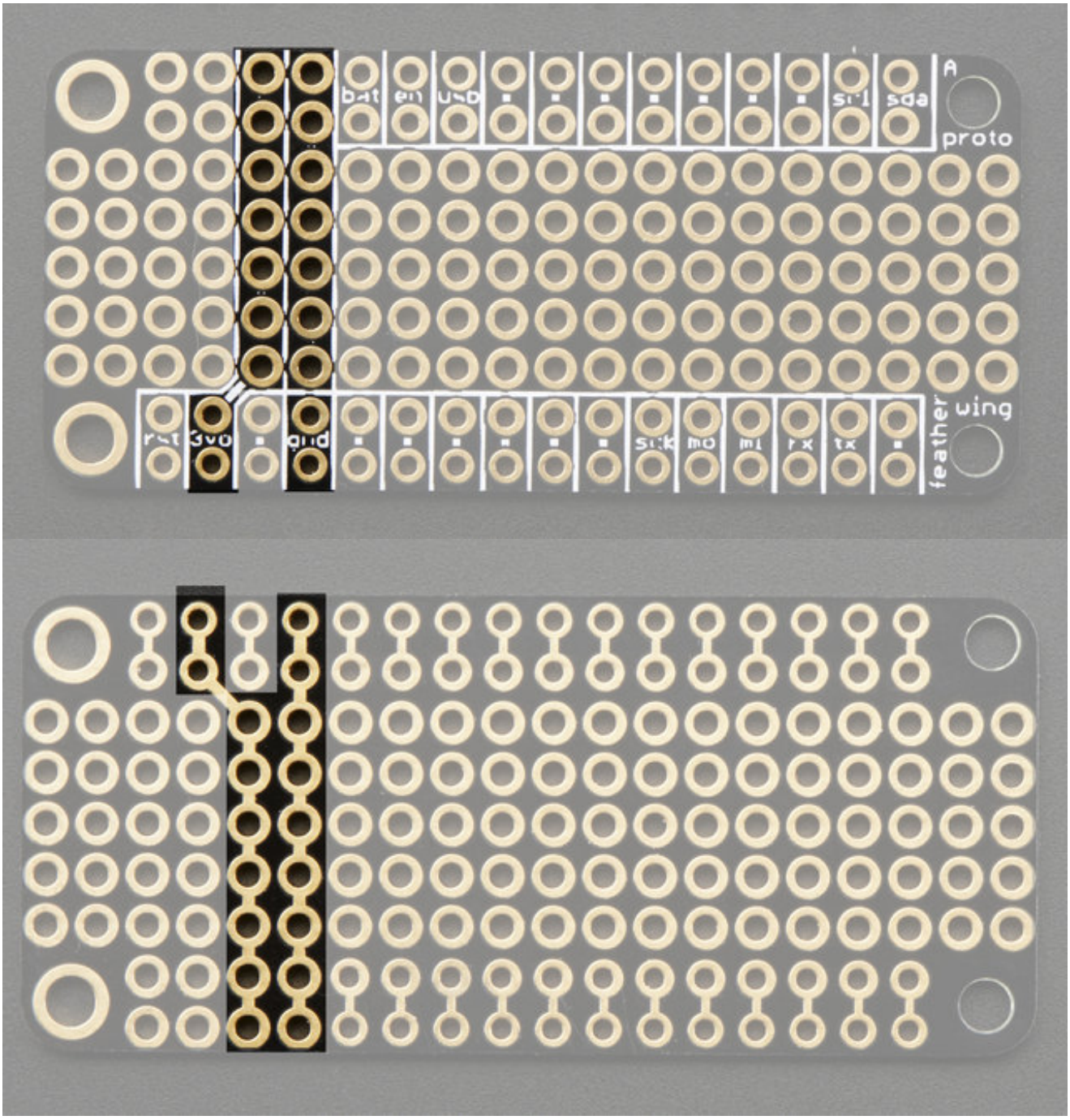
Duplicated IO Pins

On the outer edge are all the pins you'd want to solder in to connect to the Feather. The inner set of pins are boxed and have small text or dots to indicate they are connected. The above shows the outer and inner set of pins. They are tied together so you have access to each I/O pin!



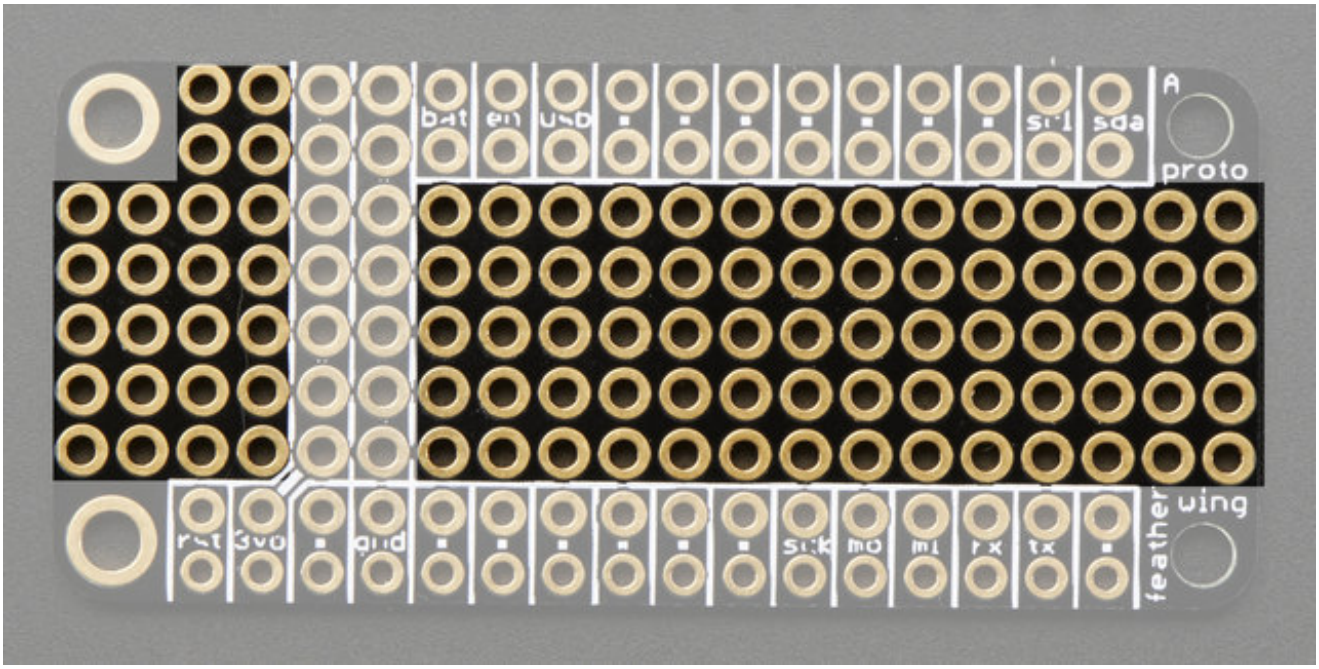
Power Rails

You also have two strips of holes that are all connected for 3.3V (left strip) and GND (right strip). This way you have plenty of power/ground connections available. The holes are 0.047" diameter and are connected with 24mil traces.



Proto Grid

Finally, there's a full set of prototyping grid, each hole is 0.047" diameter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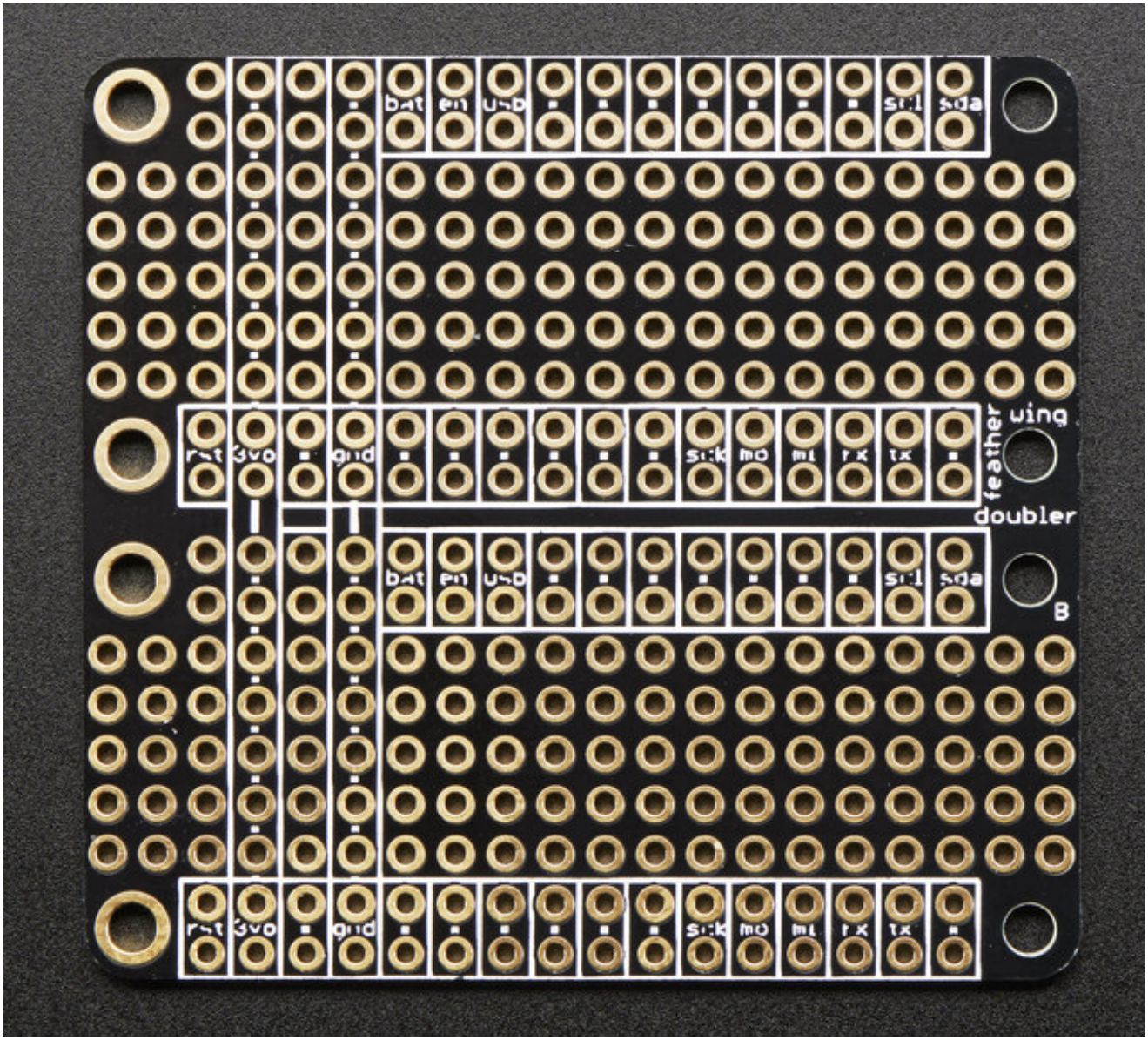
Doubler Pinout

Doubler Pinout

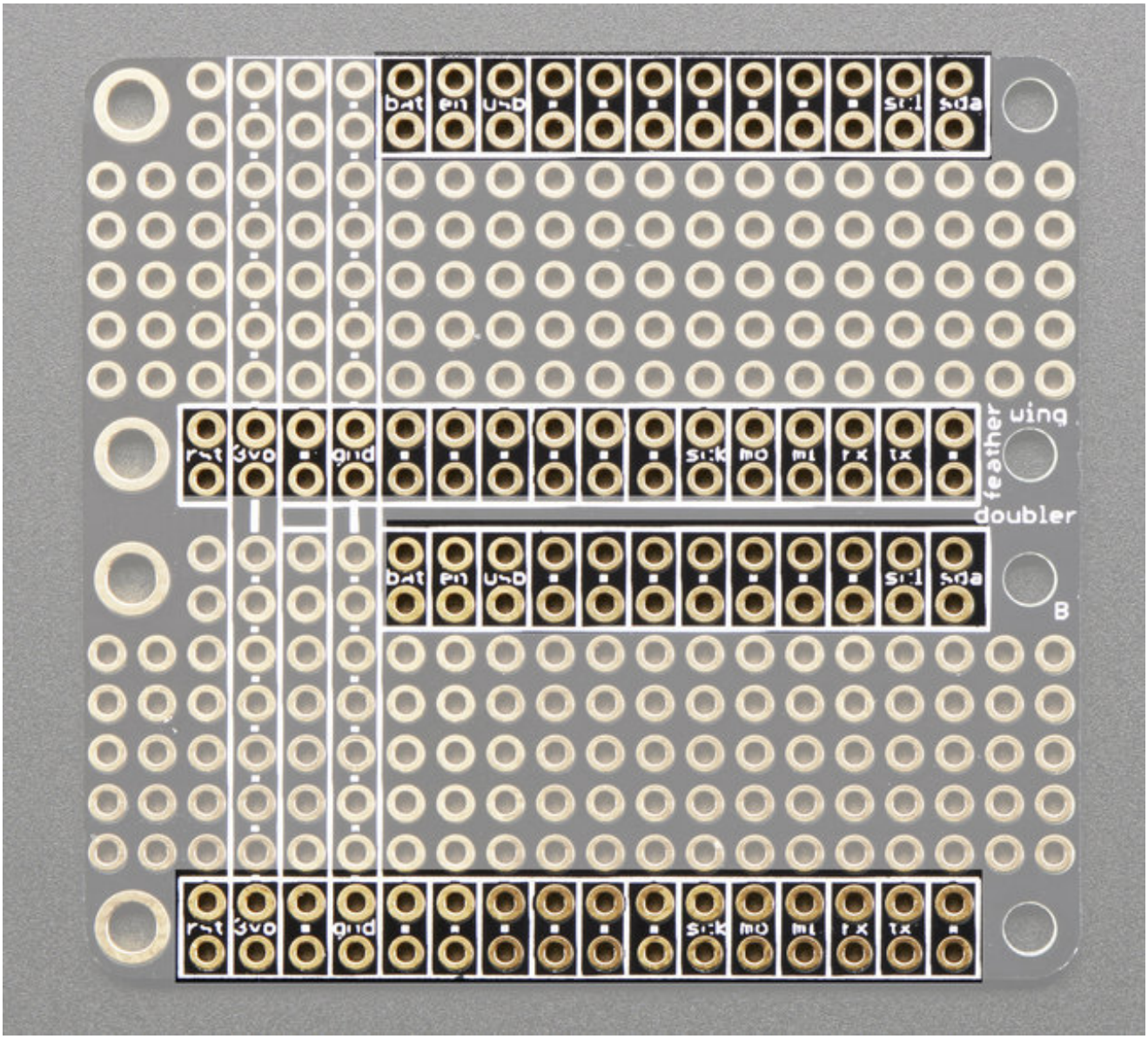
The Doubler Featherwing is fairly simple. It's 2.0" x 1.9" - the same as two proto Featherwings side by side with a 0.1" spacing in between (since there's slight variations on PCB routes, you dont want to have no spacing between them or plugged-in-feathers might jam)

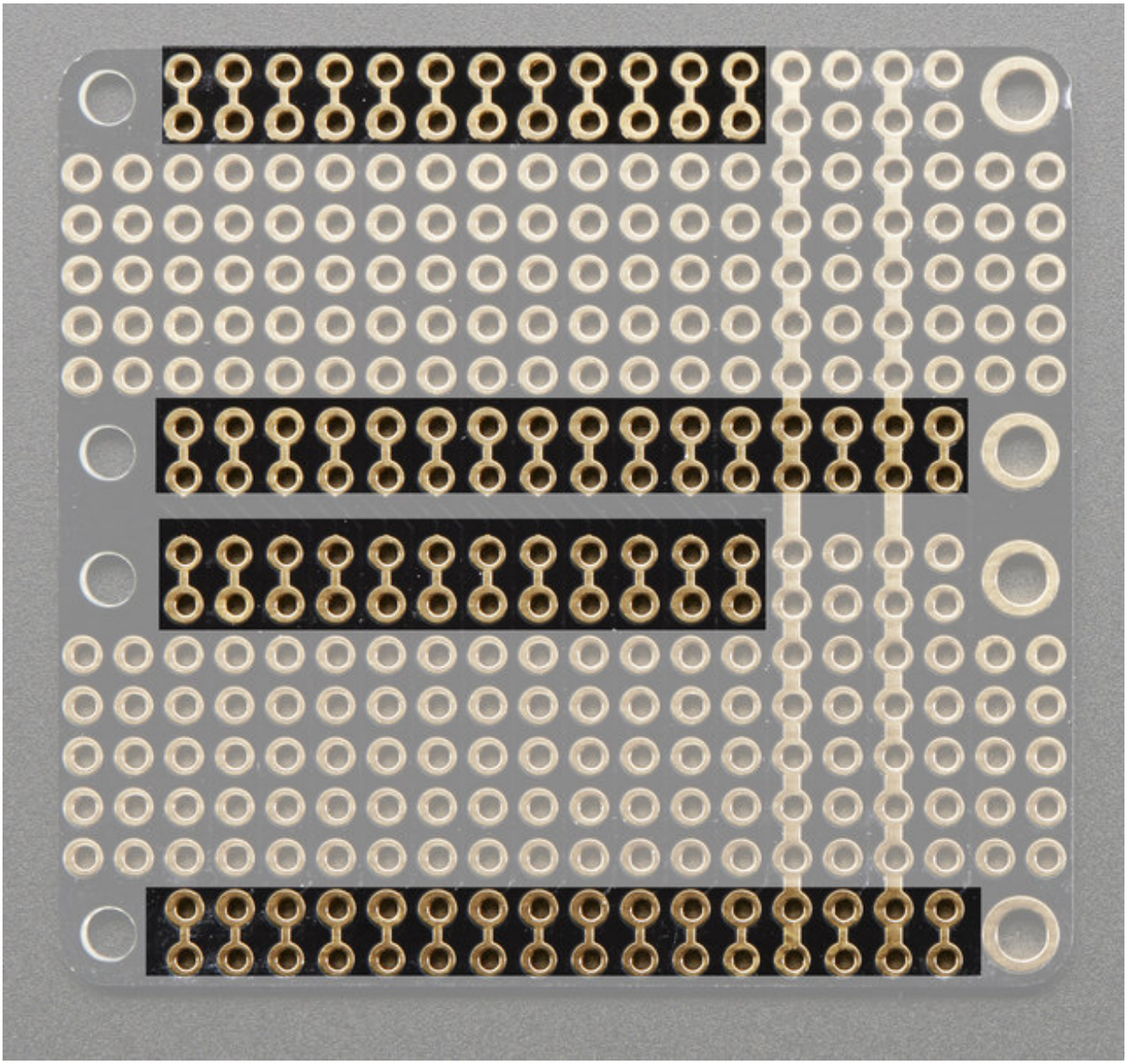


Duplicated IO Pins

On the outer edges are all the pins you'd want to solder in to connect to the Feather. The inner set of pins are boxed and have small text or dots to indicate they are connected. They are tied together so you have access to each I/O pin!

Also, both sets of IO pins are connected together

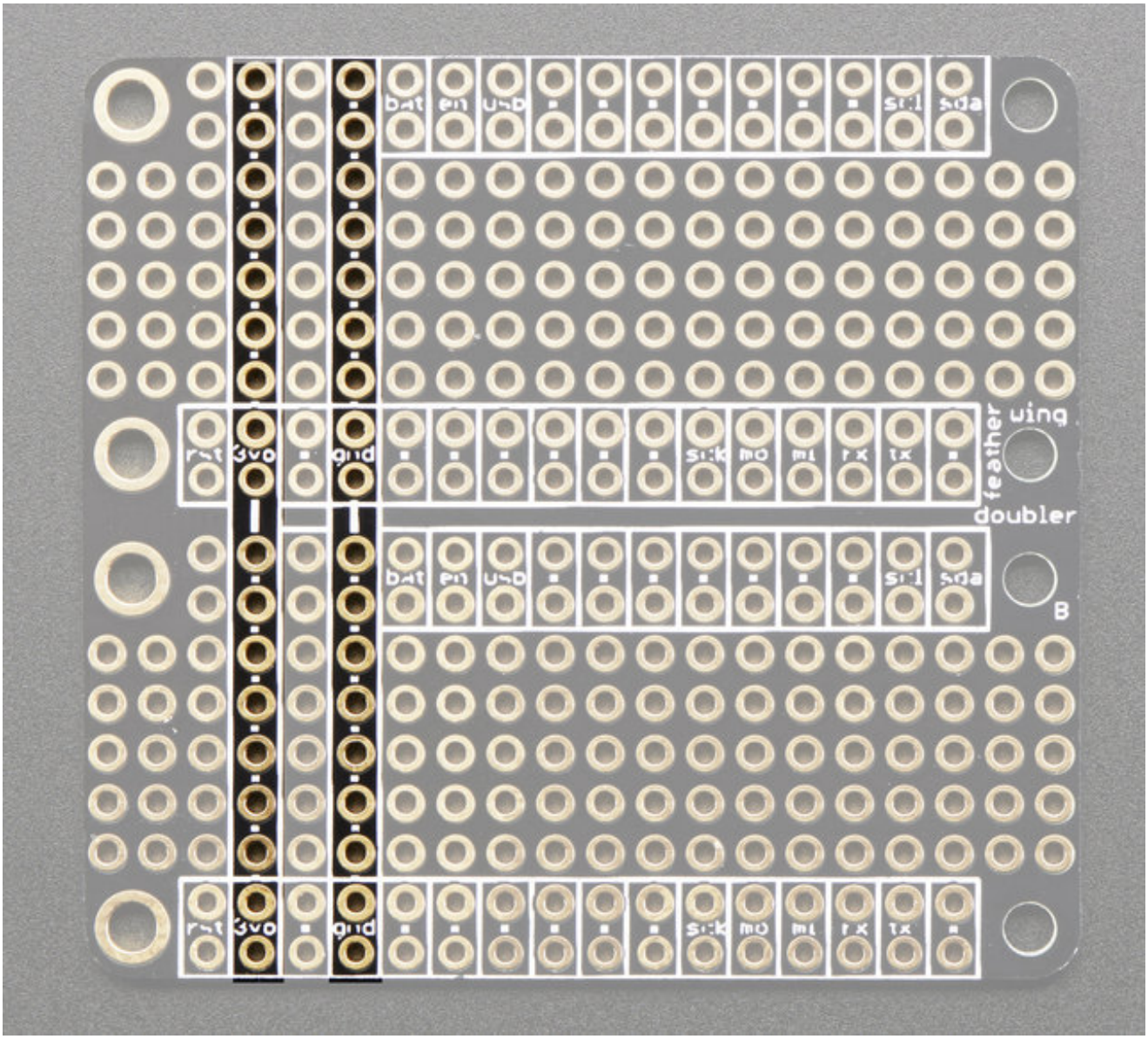




Power Rails

You also have two strips of holes that are all connected for 3.3V (left strip) and GND (right strip). This way you have plenty of power/ground connections available. The holes are 0.047" diameter and are connected with 32mil traces.

Note there's a thin strip of proto holes in between the 3V and GND rails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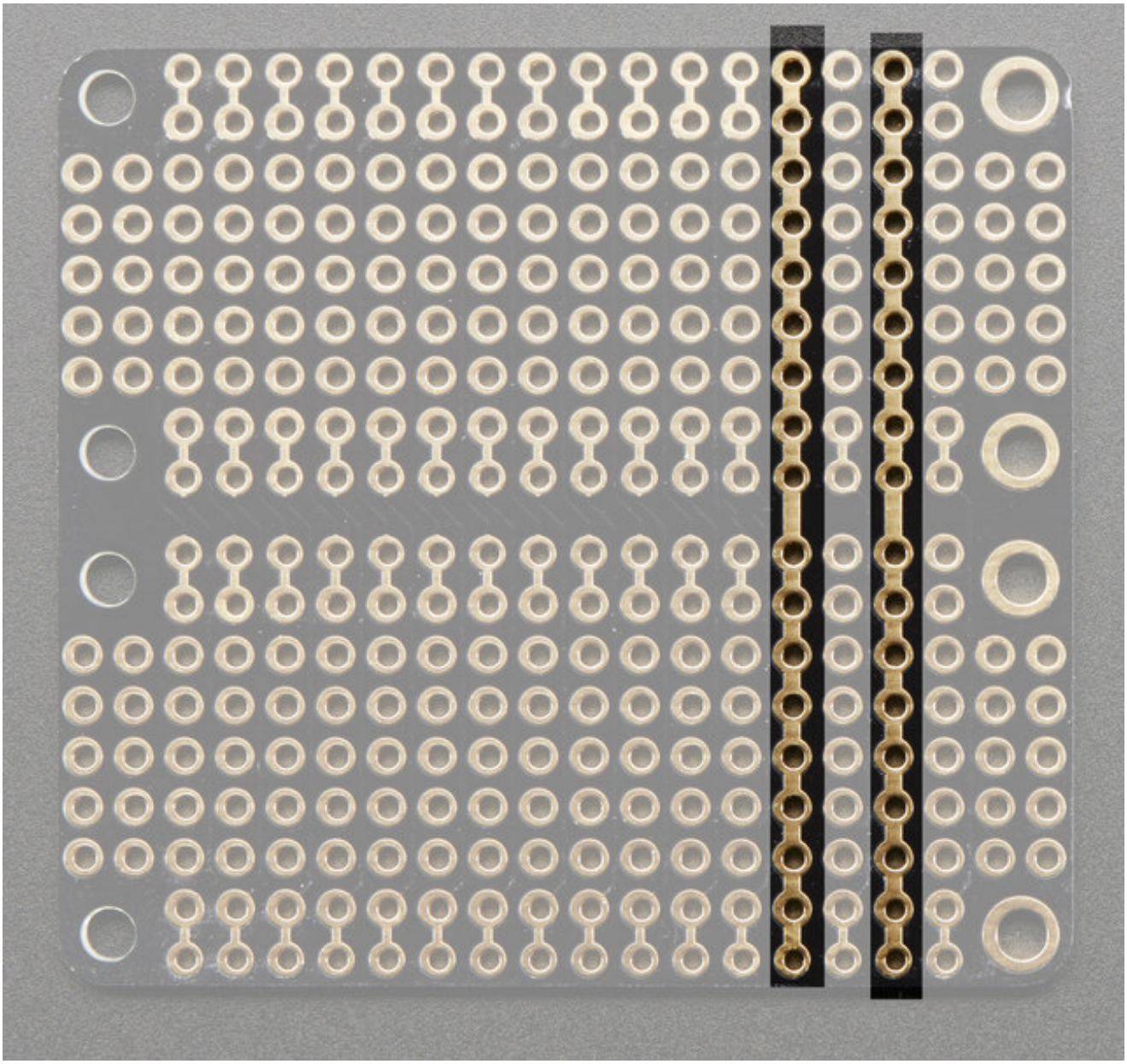

Proto Grid

Finally, there's a full set of prototyping grid, each hole is 0.047" diameter

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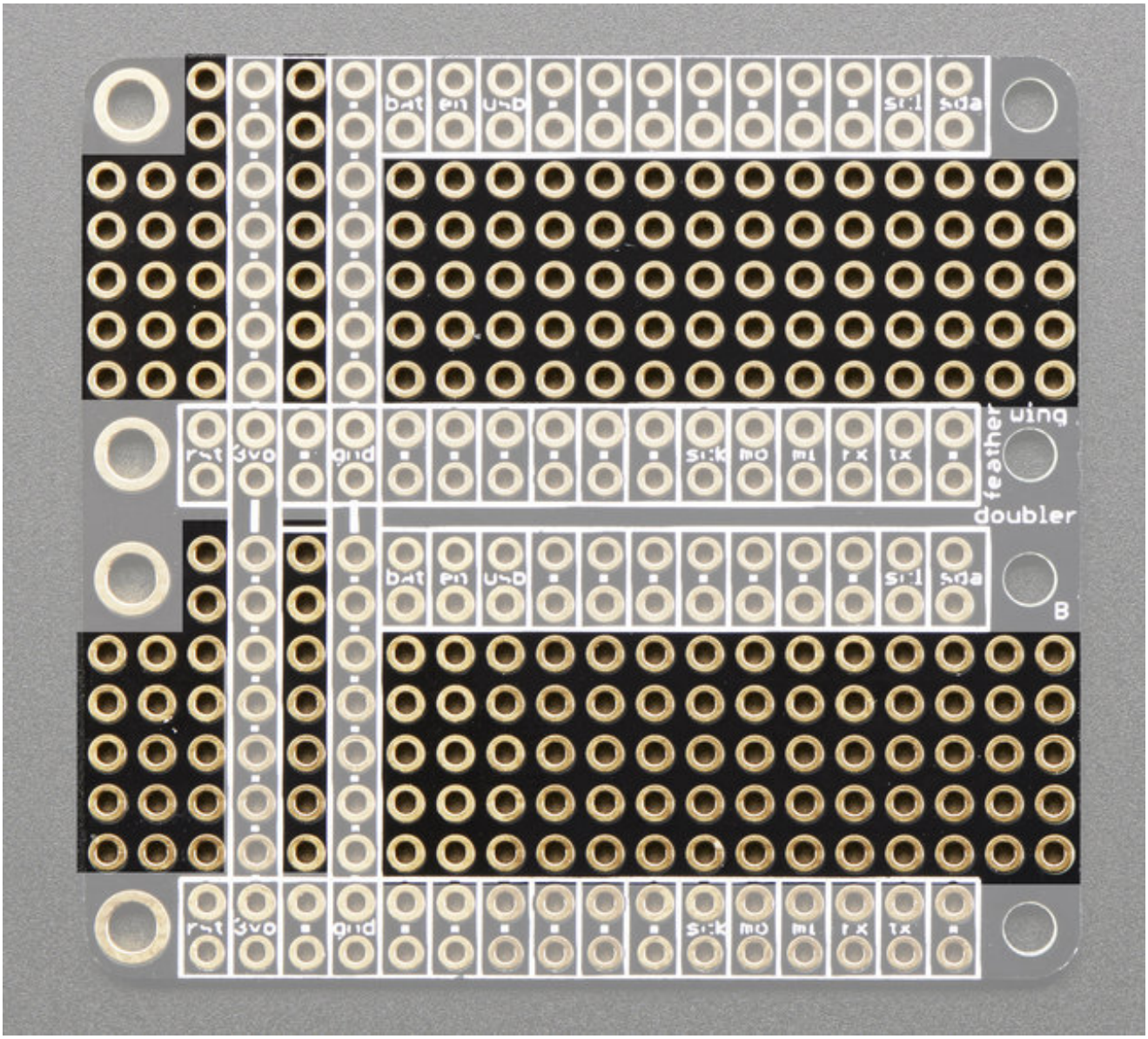
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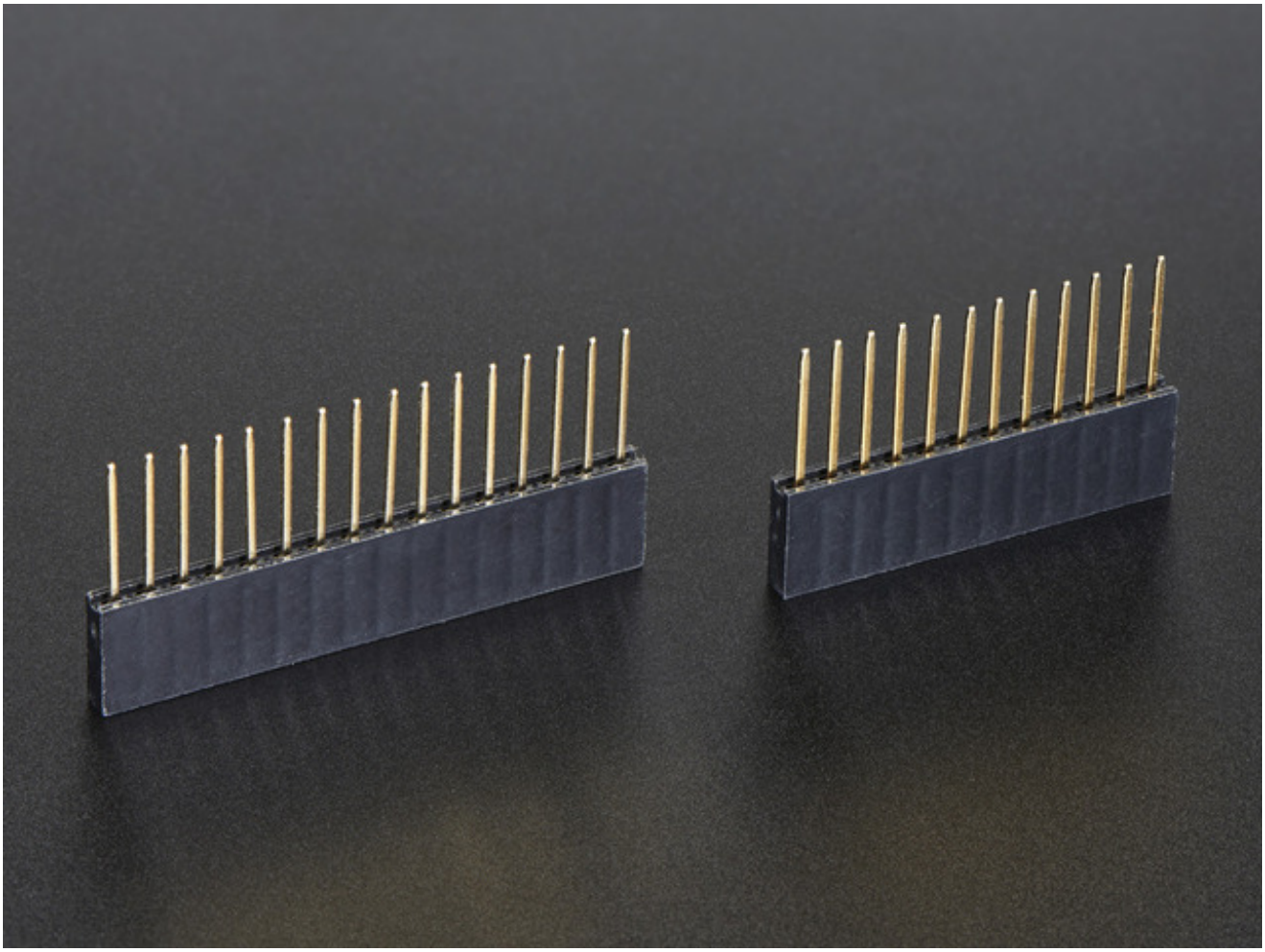
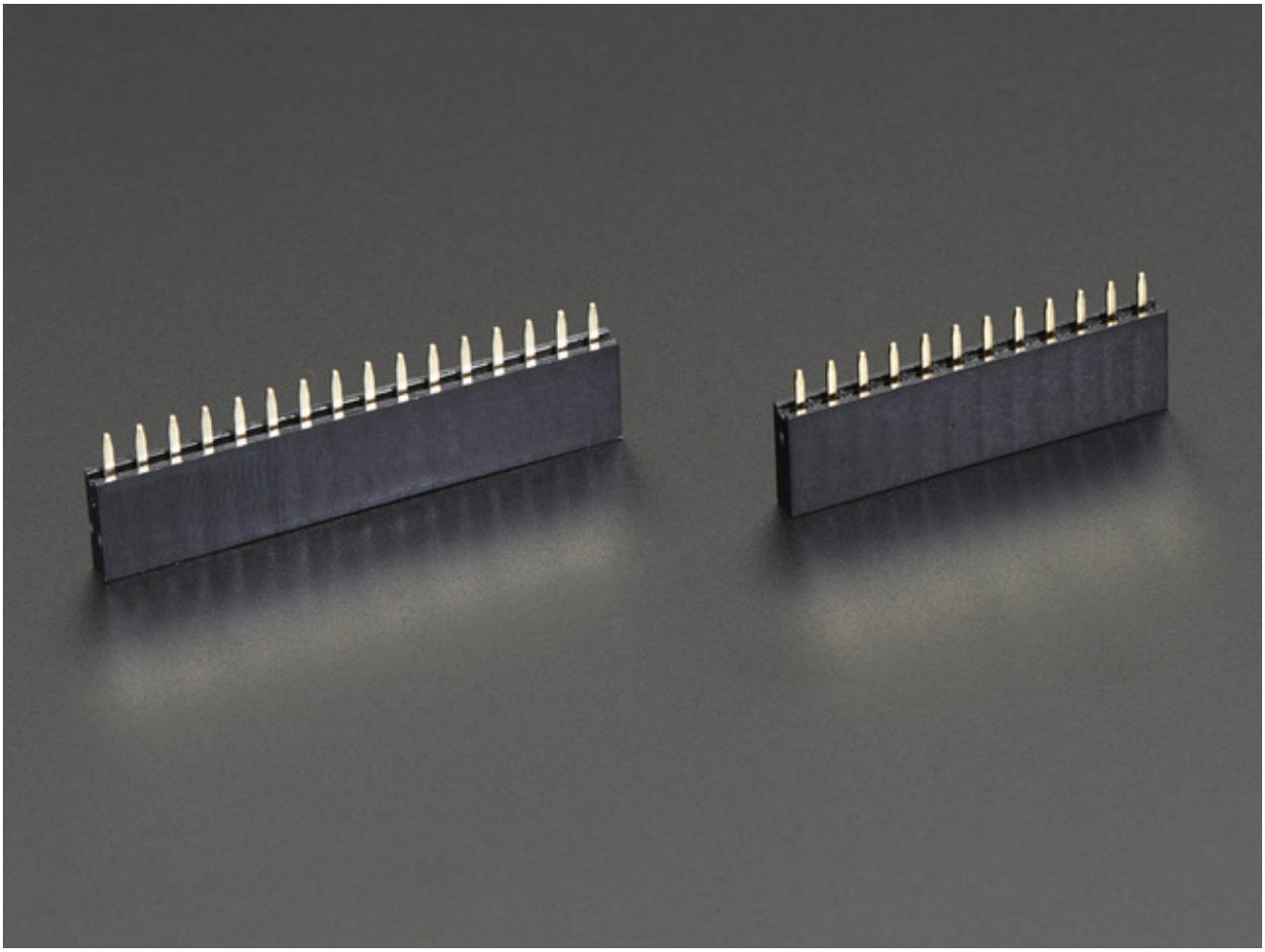
Assembly

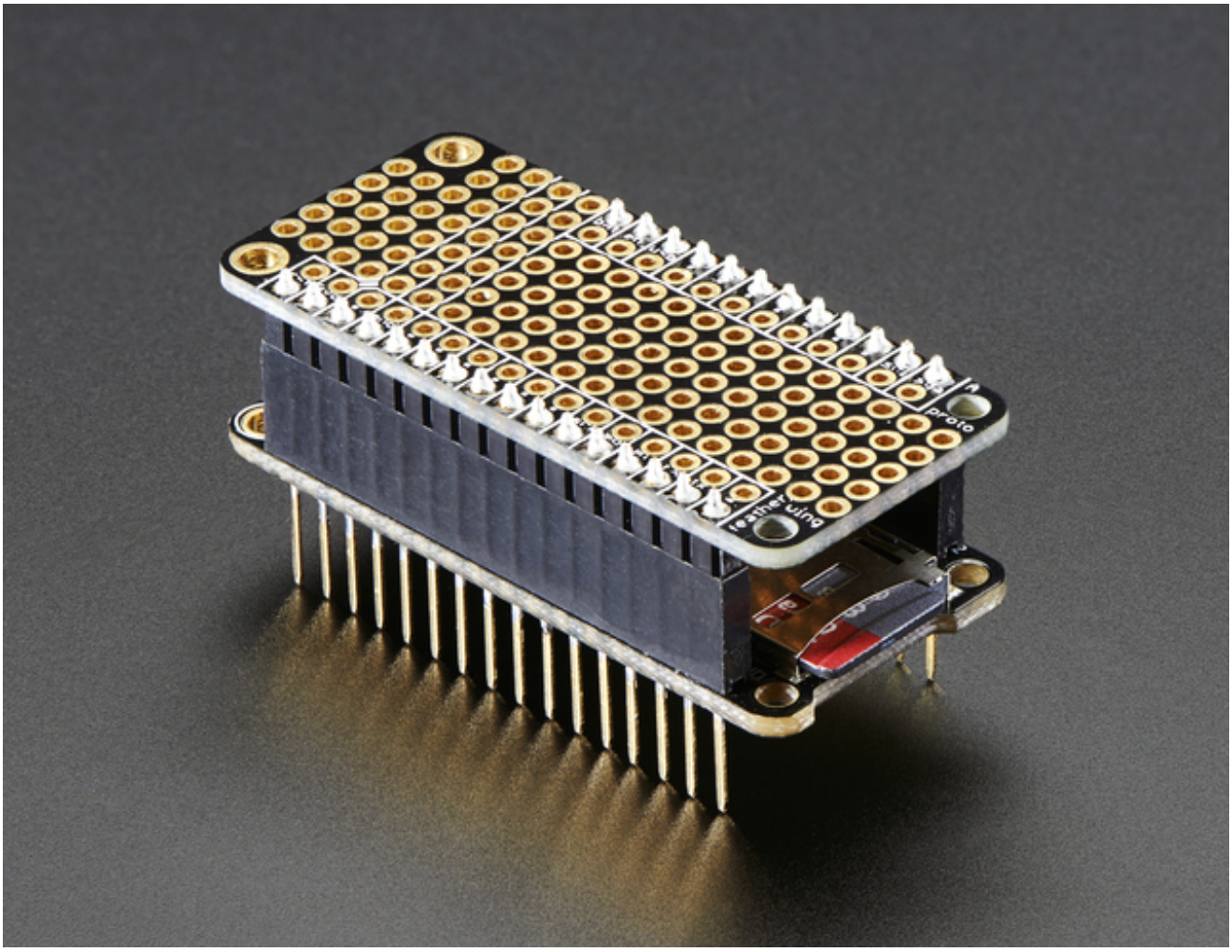
When putting together your Proto or Doubler Featherwings, think about how you want it to connect, you can use stacking headers:



Or plain female socket headers:

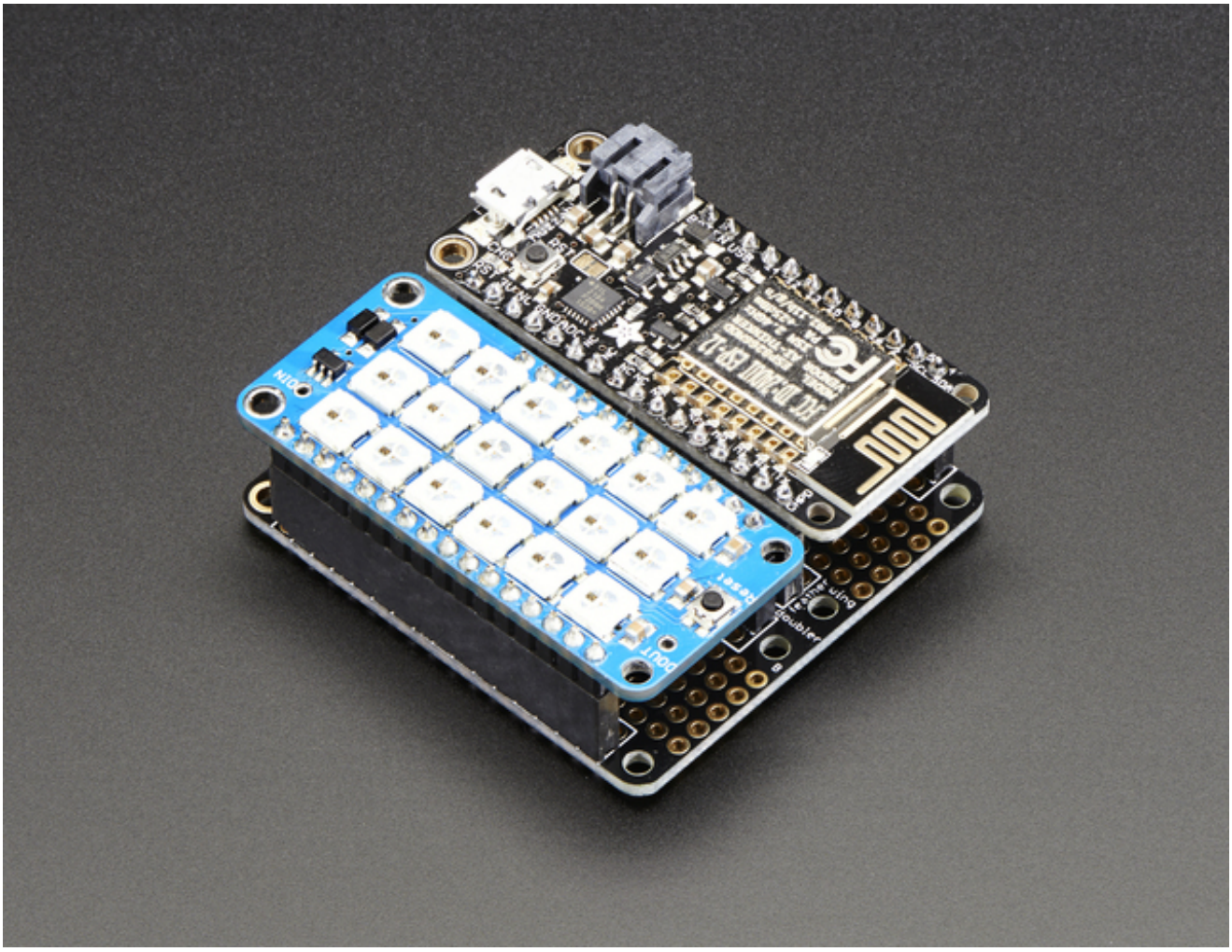


The most common method of attachment for the Proto is putting stacking or female headers on the Featherwing and then putting the Proto on top:



But don't forget, you can **also put the stacking headers on the Proto wing and stack the Feather on top of it!**

For the Doubler, you can use it side-by-side



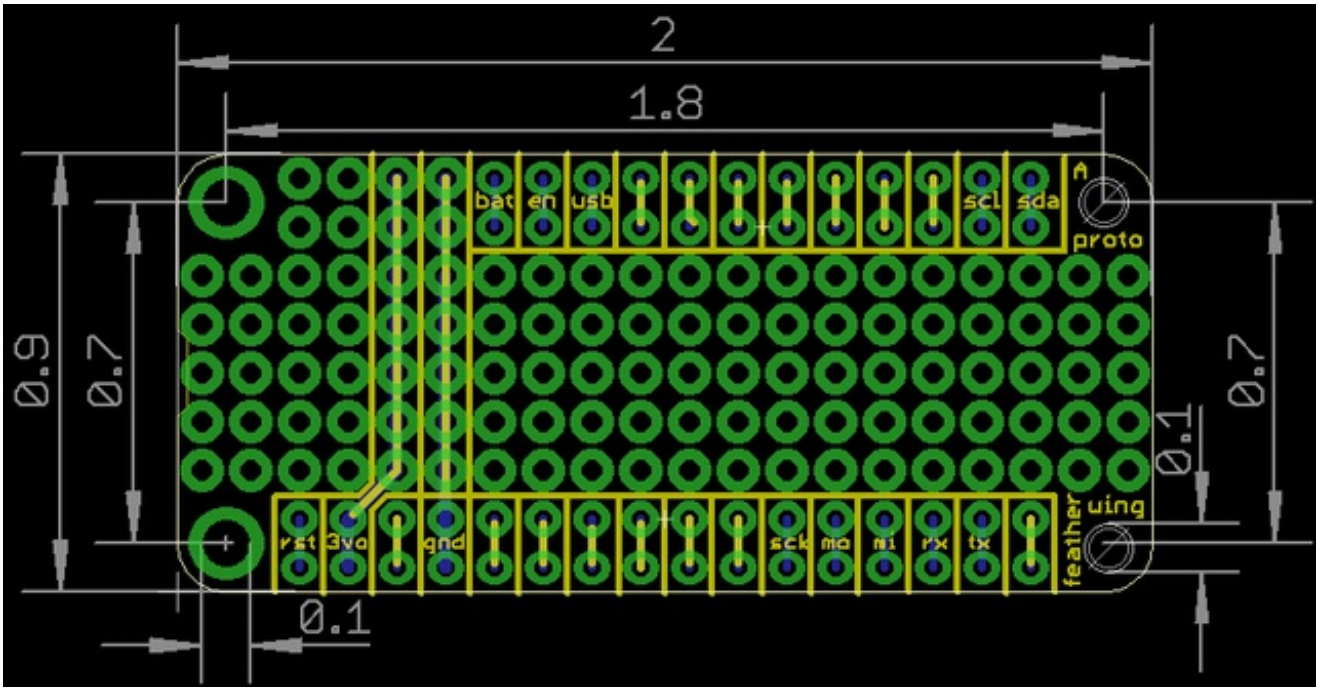
By soldering female or stacking headers onto the doubler, but you could also have mulitple stacking wings.

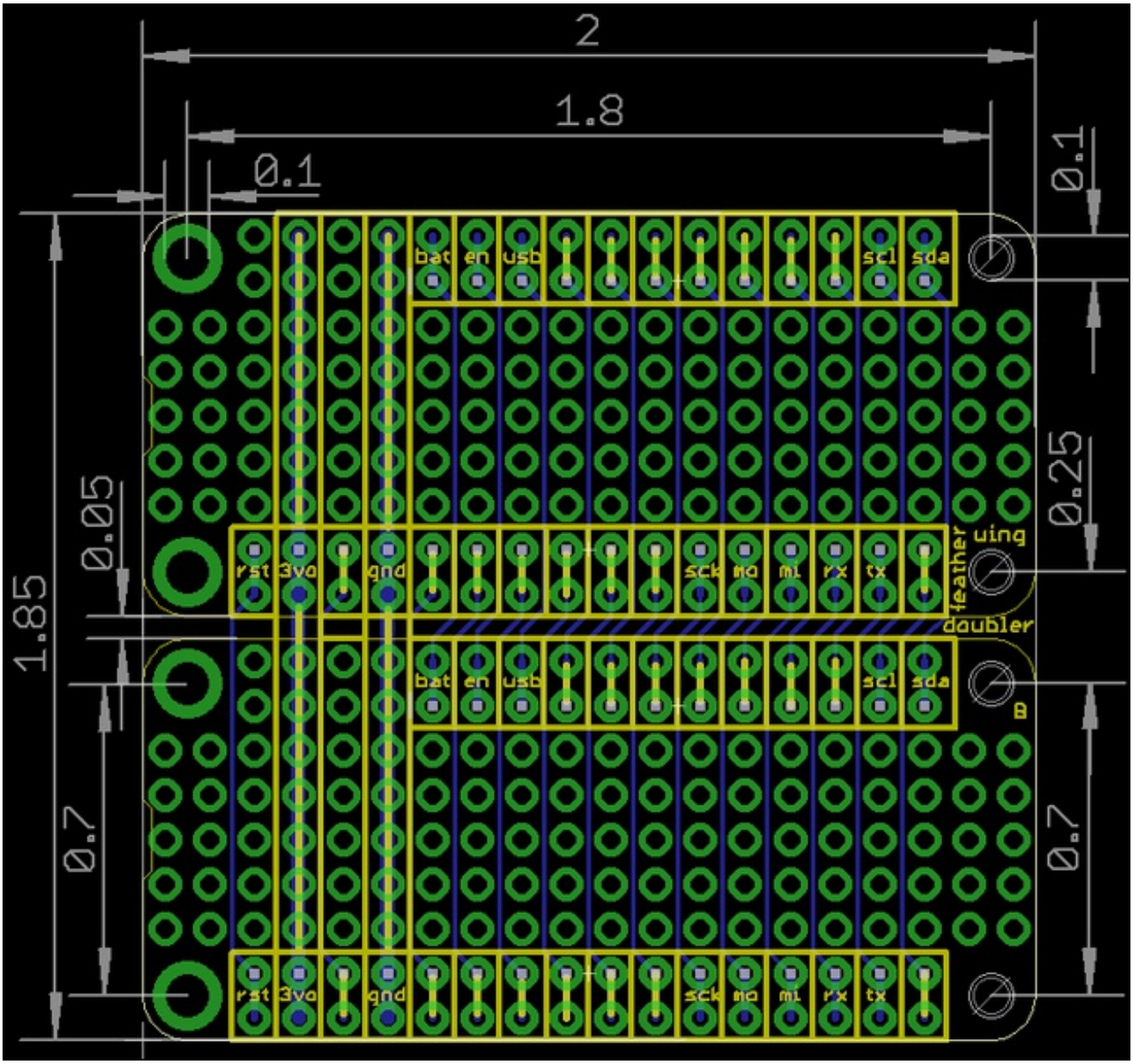
Downloads

- Original EagleCAD files can be found here, if you want to make your own custom featherwings, simply remove the prototyping holes you dont need (http://adafru.it/kC0)
- Fritzing objects available in the Adafruit Fritzing Library(http://adafru.it/aP3)

Fabrication prints

Dimensions in inches

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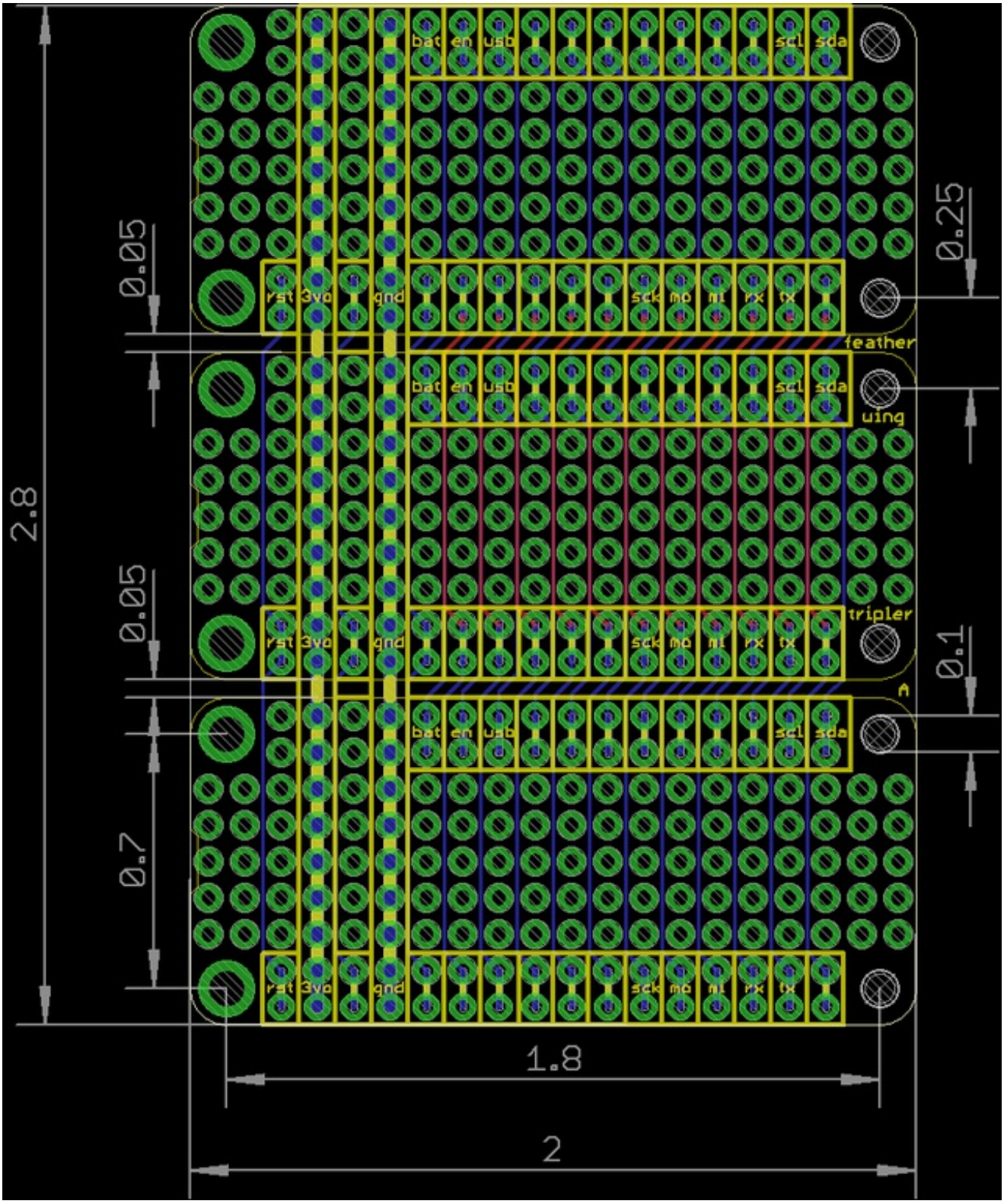
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