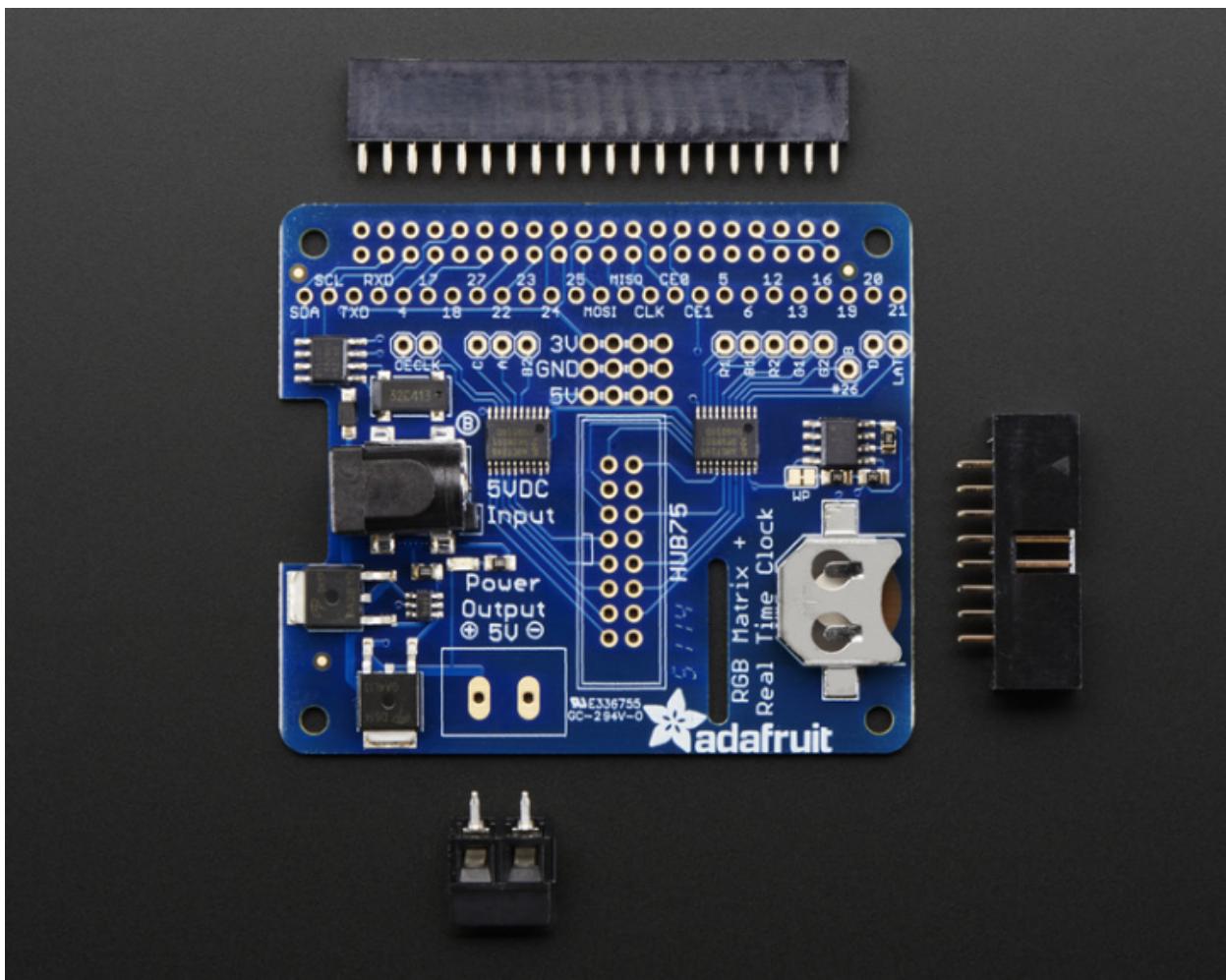


Assembly | Adafruit RGB Matrix + Real Time Clock HAT for Raspberry Pi | Adafruit Learning System

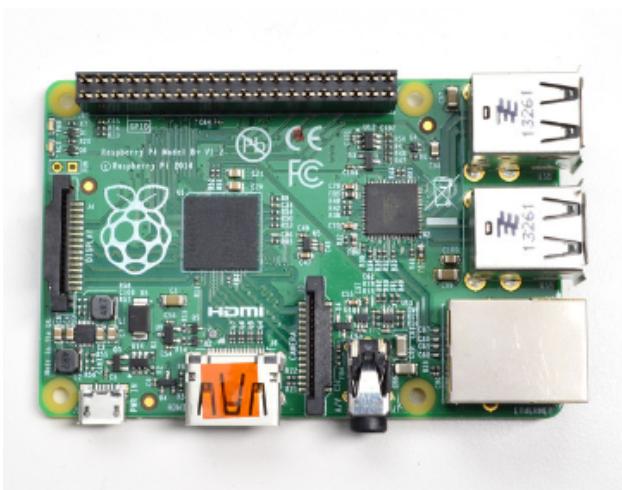
Assembly



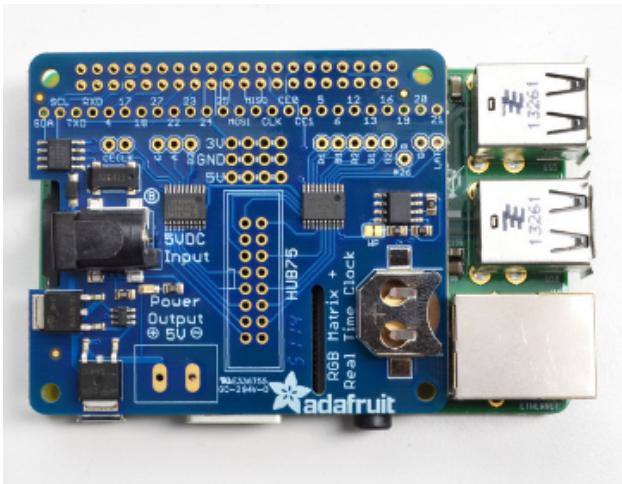
Solder on Headers and Terminal Block

Before we can a-blinkin' there's a little soldering to be done. This step will attach the 2x20 socket header so that we can plug this HAT into a Raspberry Pi, the 2x8 header so we can plug the RGB matrix into the HAT, and a terminal block so you can power the matrix through the HAT.

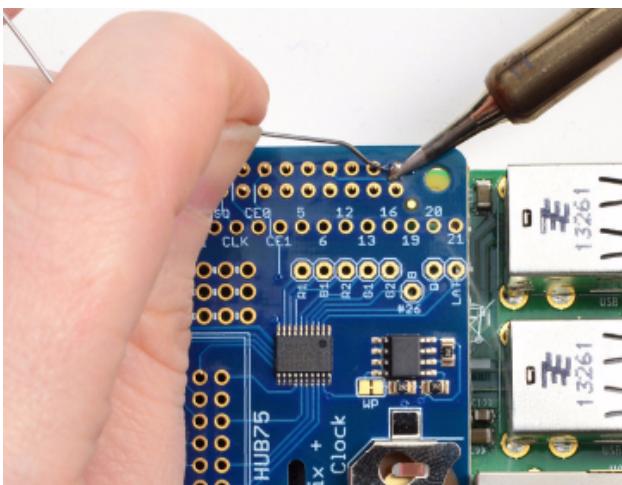
Start by plugging the 2x20 header into a



Raspberry Pi, this will keep the header stable while you solder. Make sure the Pi is powered down!



Place the HAT on top so that the short pins of the 2x20 header line up with the pads on the HAT

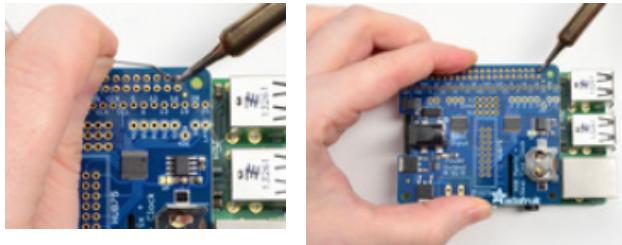


And Solder!

Heat up your iron and solder in one header connection on the right.

Once it is soldered, put down the solder and reheat the solder point with your iron while straightening the HAT so it isn't leaning down

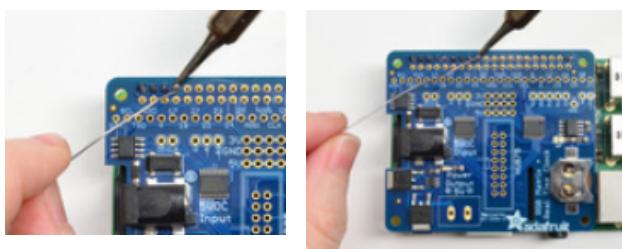
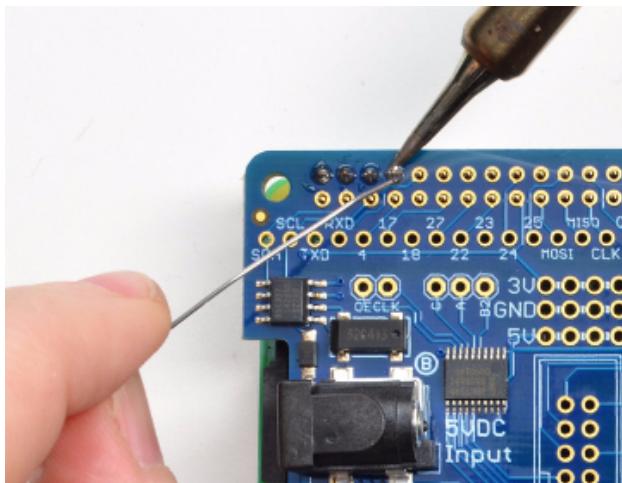
(For tips on soldering, be sure to check out our [Guide to Excellent Soldering](#)).

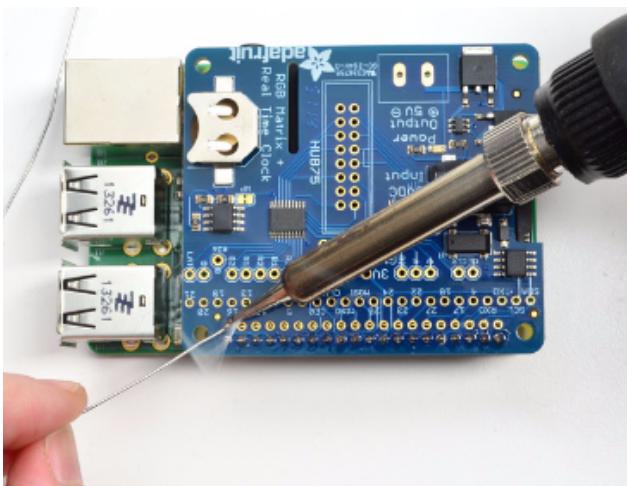
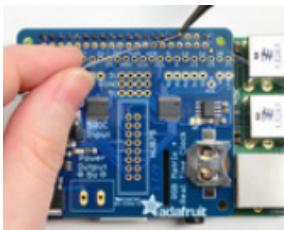


Solder one point on the opposite side of the connector



Solder each of the connections for the top row

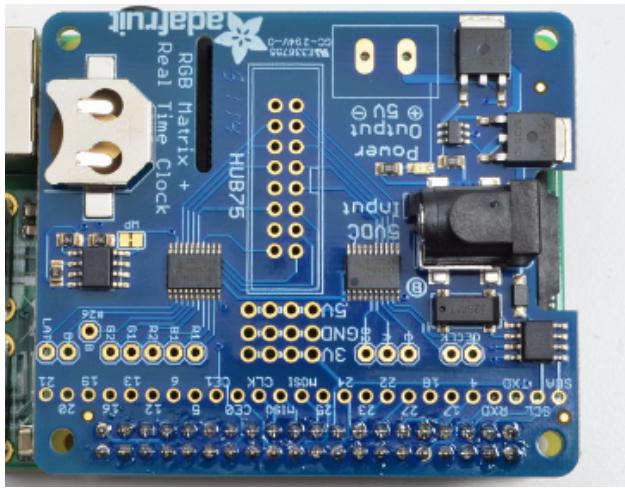




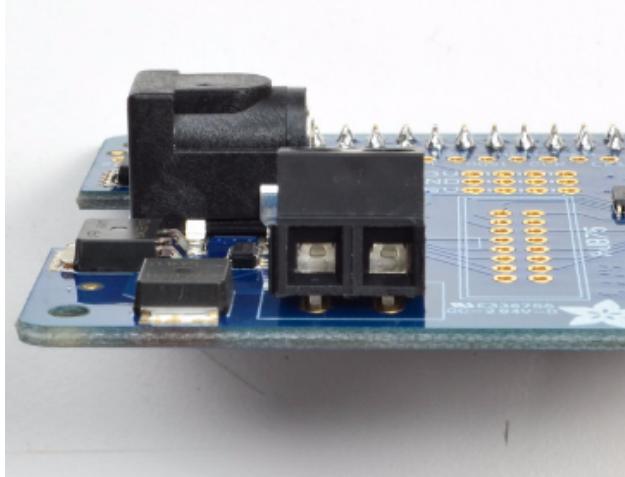
Flip the board around and solder all the connections for the other half of the 2x20 header



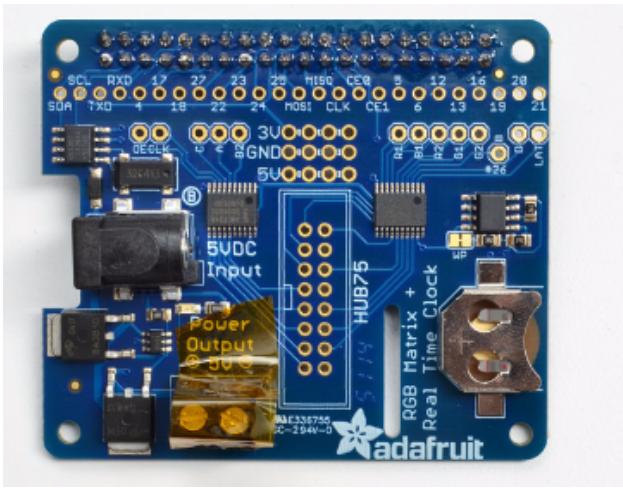
Check over your work so far, make sure each solder point is shiny, and isn't bridged or dull or cracked



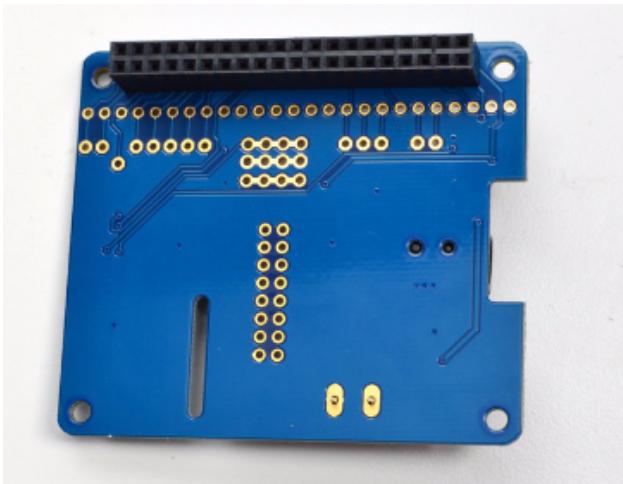
Place the 2 pin terminal block first, make sure the two 'mouths' are facing outwards



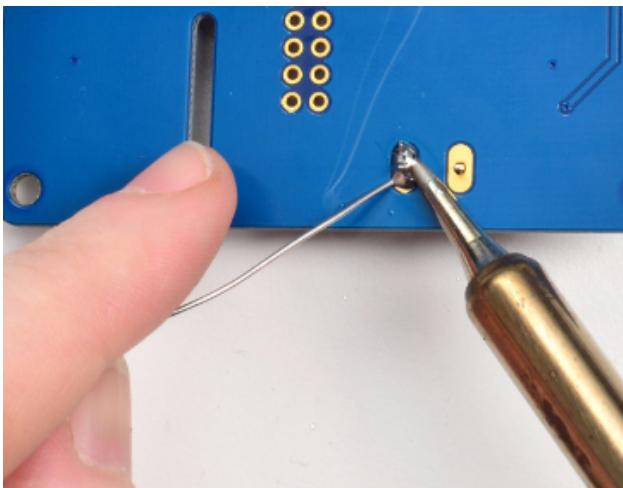
Use some tape to stick the terminal down in place

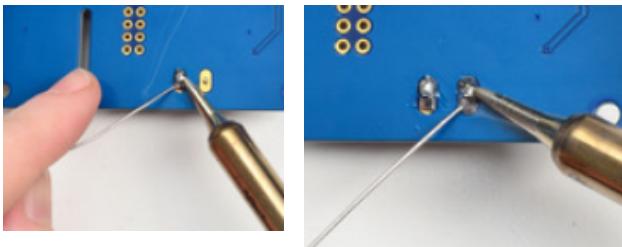


Flip the board over, the tape should keep the terminal block in place

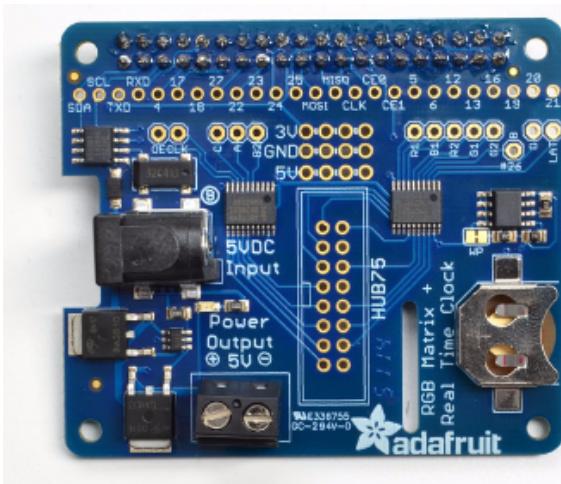


Solder the two big connections, use plenty of solder!





Check your work, the connections should be solid and shiny



Next up we will attach the 2x8 IDC header. Unlike the 2x20 header, **this connector has a direction!**

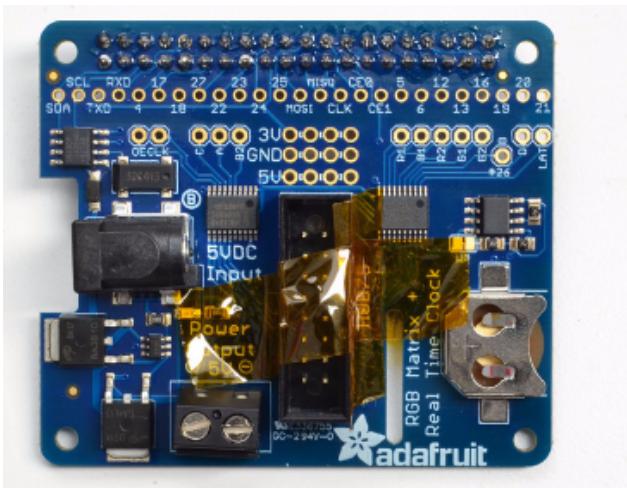
Notice in the middle there's an outline for the connector in the middle. On the right it says **HUB75** and on the left of the connector there is a little 'cutout' shape. This cutout shape must match up with the cut out on the connector.

If you solder it in backwards, its not a huge deal, you can use diagonal cutters to cut out a notch on the opposite side, but if you get it right then you will never have to worry about plugging in your matrix data cable the wrong way

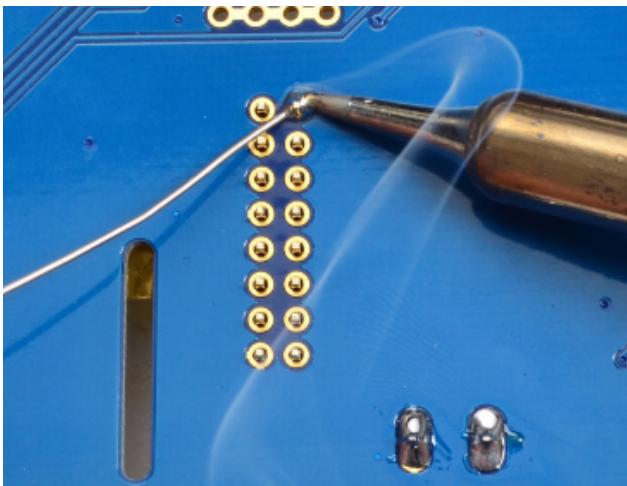
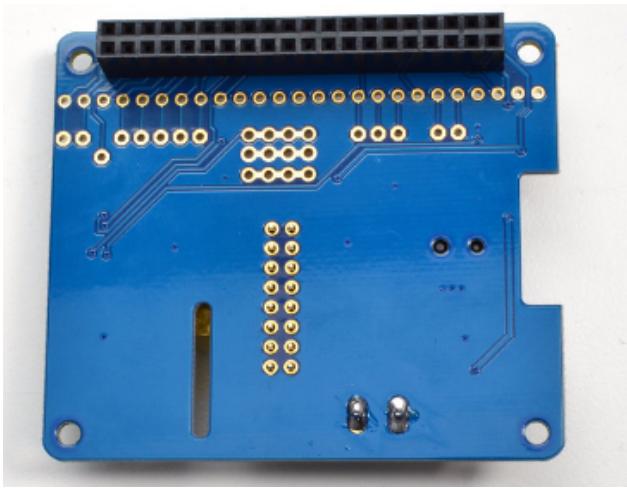
Place the connector in the slot so that the notched side is on the **left**



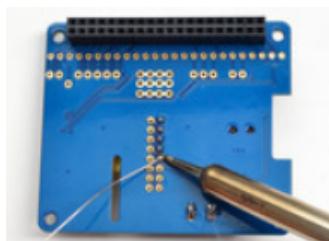
Use some tape to hold the IDC connector in place

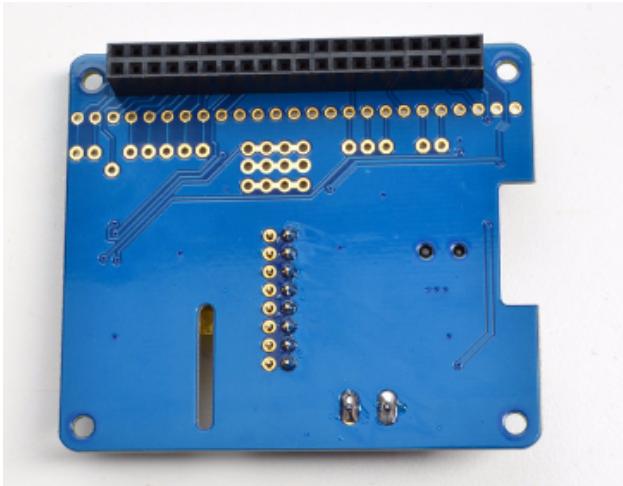


Flip the board over, the tape should keep the connector from falling out

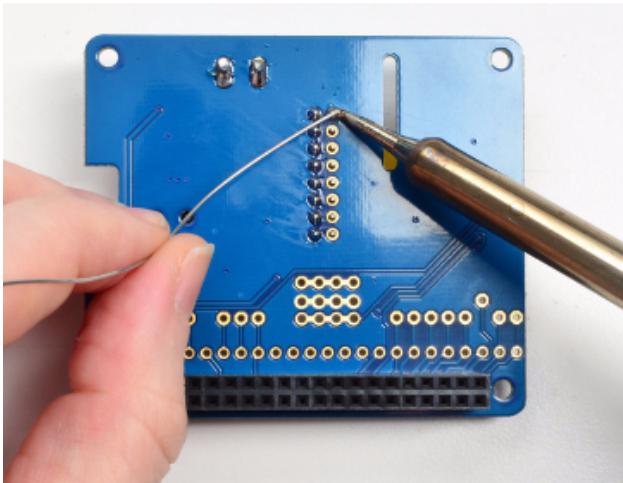


Solder in all the pins like you did with the 2x20 connector

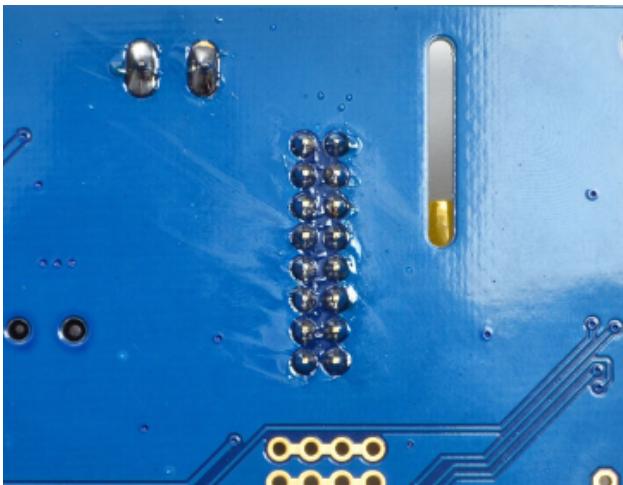




Check your work! Make sure all the solder points are clean and not shorted or cracked or dull



Flip the board around & solder up the other half!



Check your work one last time...now continue to testing!

PINOUTS

DRIVING MATRICES

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