MXDB Assembly Guide

Last Revised 1/3/22

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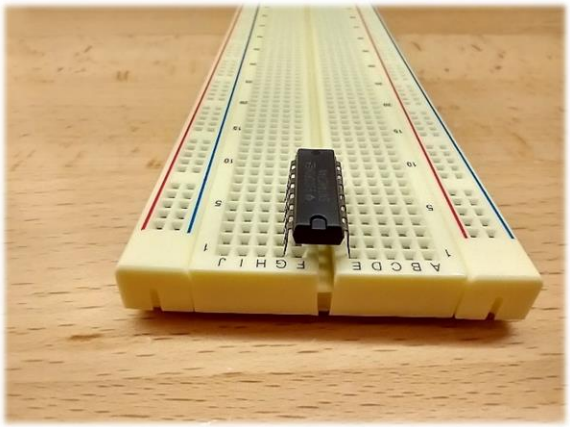
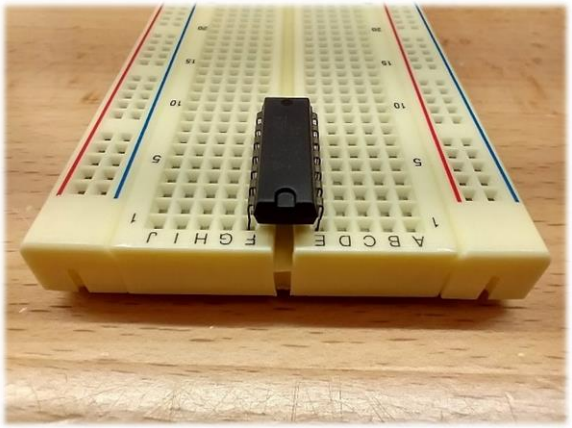
IC Remover and IC Pin Shaper Guide

As of 2022 both an IC remover and IC Pin Shaper have been added to the kit

IC Pin Shaper

When DIP ICs are produced their pins are skewed outward. To be able to insert these devices in either DIP sockets or breadboards the pins need to be bent straight. The IC Pin Shaper is a simple tool for doing just this. Below are images from left to right showing a new IC and then when the pins have been bent straight. It can be seen that the bent pins now align to the breadboard connections.

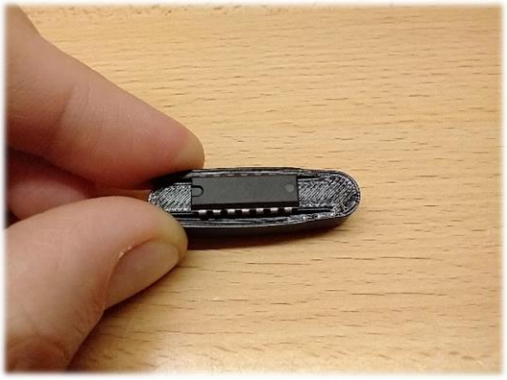




Pin Bending Procedure

Insert the DIP IC as shown below into the tool

Squeeze the two arms of the tool against the pins of the IC.

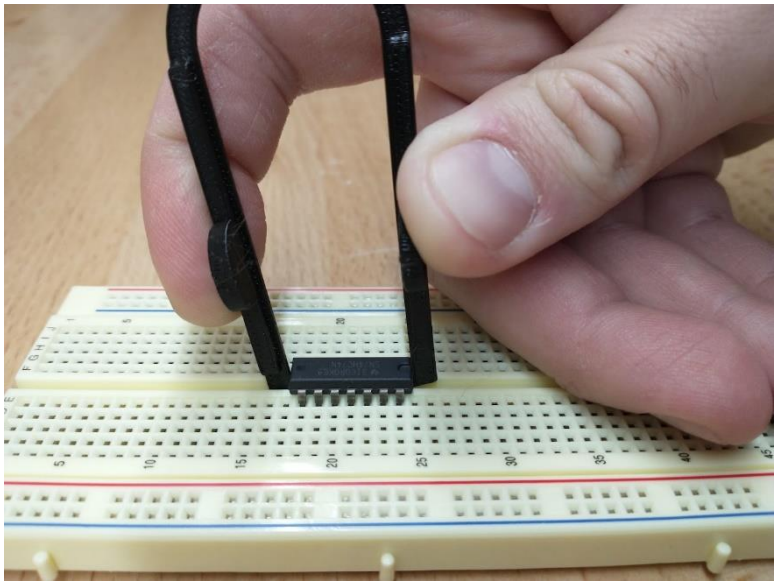


Now the IC will be prepped for use with a breadboard.

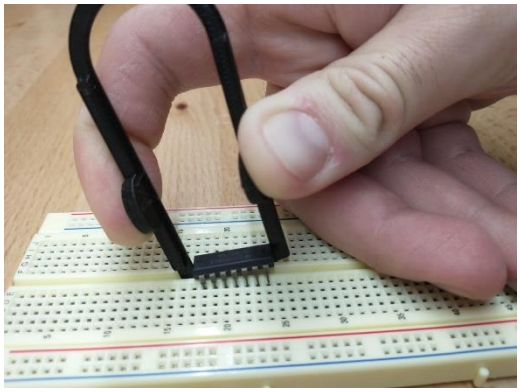
IC Remover

IC Removal Procedure

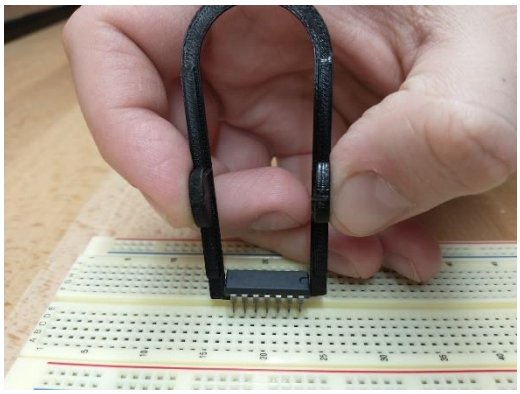
The IC remover has two small teeth used for prying an IC out of a breadboard. Hold the tool lightly, just enough to squeeze against the IC. The key is to pry not pull. Pulling straight up on the IC can cause bent and bent pins or the IC to be flung. Use leverage don't pull!



gently begin to pry one side of the IC up as shown below, until you feel the release of one end. Then stop!



Next rock the remover in the opposite direction to release the pins on both ends of the IC. The IC will just pop out.



Procedure

Step 1: Break Apart Headers

Break apart the three 40-pin headers

From header 1: 5x 8-pin headers

From header 2: 1x 8-pin headers, 2x 5-pin headers, 1x 3-pin headers, and 3x 2-pin headers

From header 3: 2x 20-pin headers

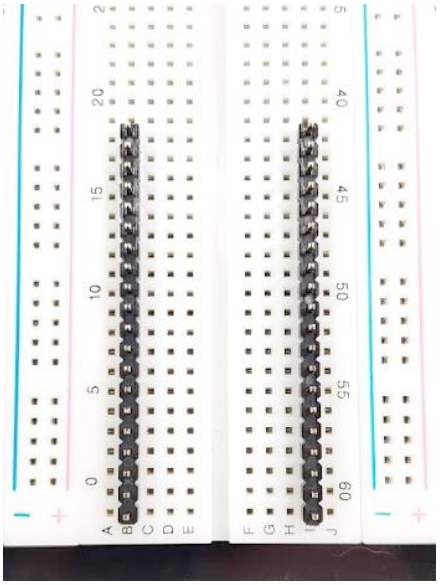
Step 2: USB Connector

Solder the USB Connector to the MXDB

Step 3: MXDB Breadboard Connections

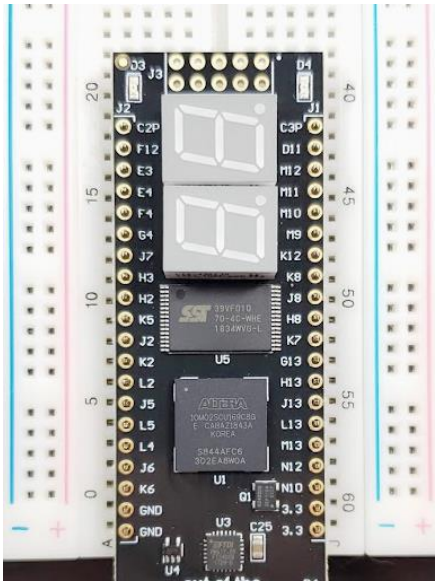
Step 3.1: Insert Pins into Breadboard

Insert the 20-pin headers as displayed. The long side of the headers will be inserted into the breadboard.



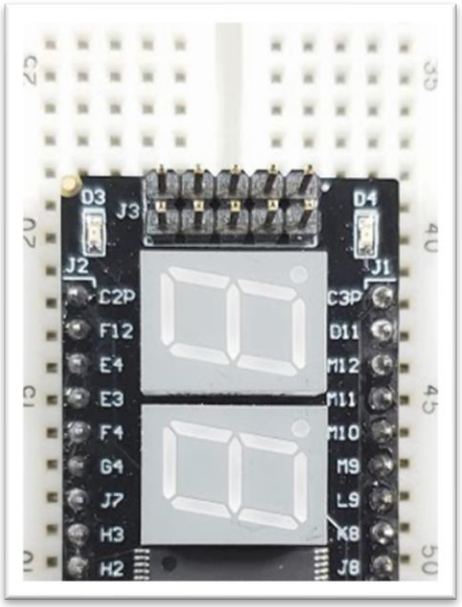
Step 3.2: Solder Pins

Lay the MXDB on the pins in the breadboard and solder.



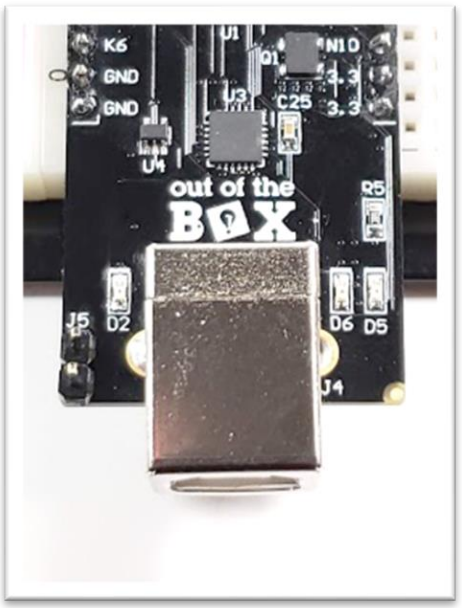
Step 4: JTAG Connection

Solder the 5-pin headers to J3 as displayed. The long portion of the headers will point up. To solder these pins, the MXDB will need to be removed from the breadboard.



Step 5: Read Enable Header

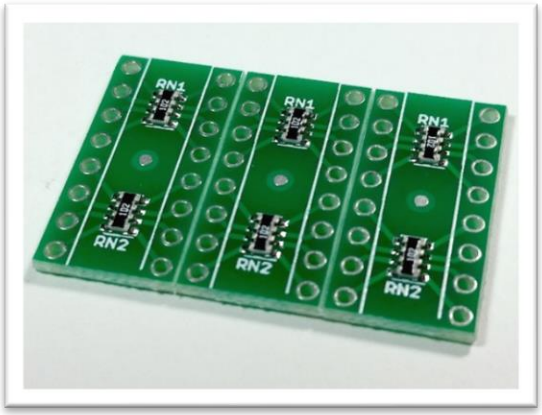
Solder a 2-pin header to J5 of the MXDB.

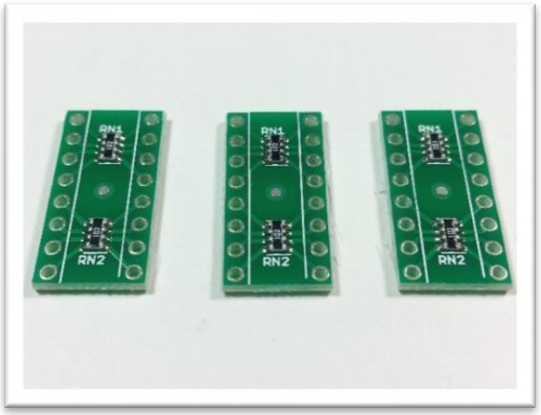


Step 6: DIP Resistors

Step 6.1: Break Apart Array

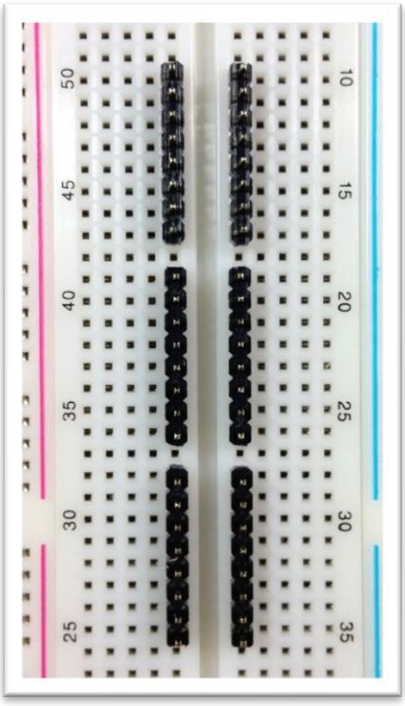
Break apart the DIP resistor boards from the array.





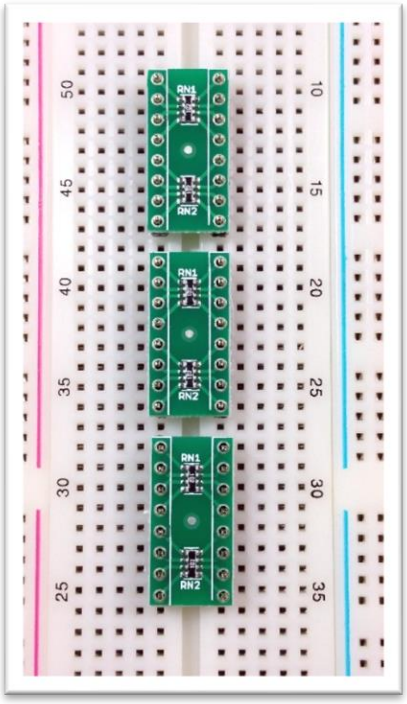
Step 6.2: Insert Pins into Breadboard

Place the 8-pin headers into the breadboard as displayed.



Step 6.3: Solder Pins

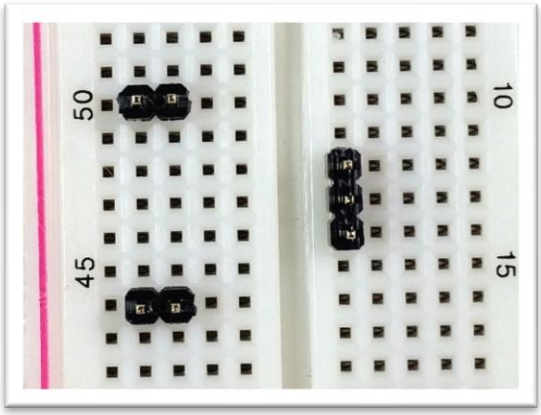
Place the DIP resistor boards onto the headers and solder.



Step 7: Toggle Switch

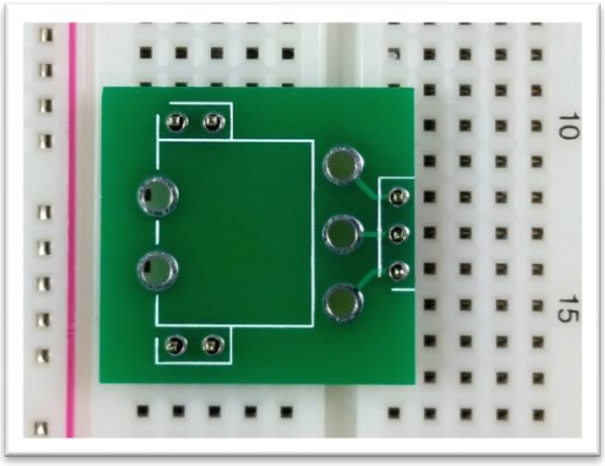
Step 7.1: Insert pins into Breadboard

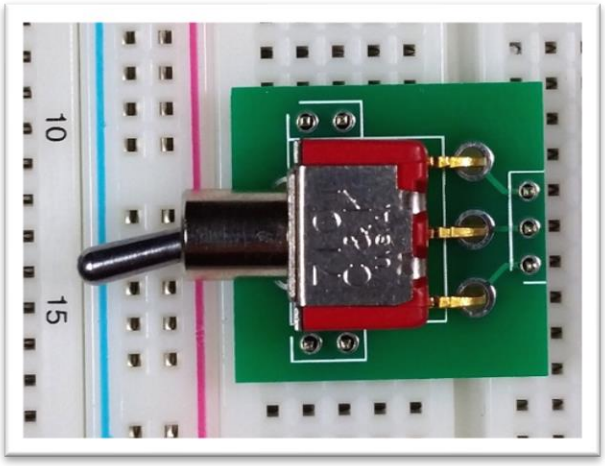
Insert the 2-pin headers and the 3-pin header into the breadboard as displayed.



Step 7.2: Place Board and Switch

Place the switch breakout board and switch as displayed, and then solder.





Step 7.3: Solder Mechanical Pins

Remove the switch breakout board from the breadboard and solder the remaining mechanical mounts of the switch.