

## Tashitachiha SPIISD DIY KIT assembly guide



Store page:

<https://en.infinityproducts.co.jp/product-page/sp2sd-diykit-bare-pcb-board-a-b>

GitHub:

[https://github.com/kerokero5150/SP2SD\\_DIY\\_KIT](https://github.com/kerokero5150/SP2SD_DIY_KIT)

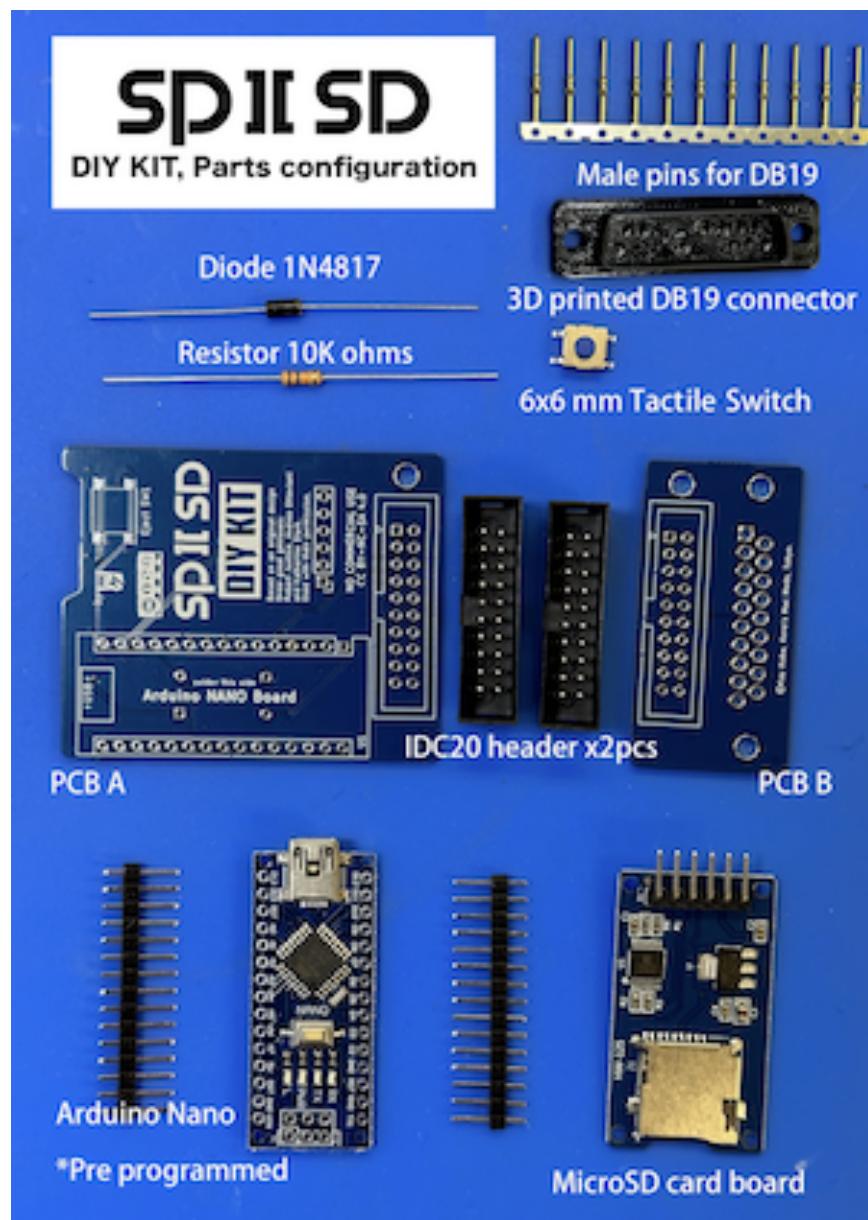
Blog:

<https://ameblo.jp/keroxiee1016/entry-12819341808.html>



## KIT CONSTRUCTION

Please make sure the following items are included in the kit. If you want to prepare the kit by yourself, please purchase the parts referring to this [BOM](#).

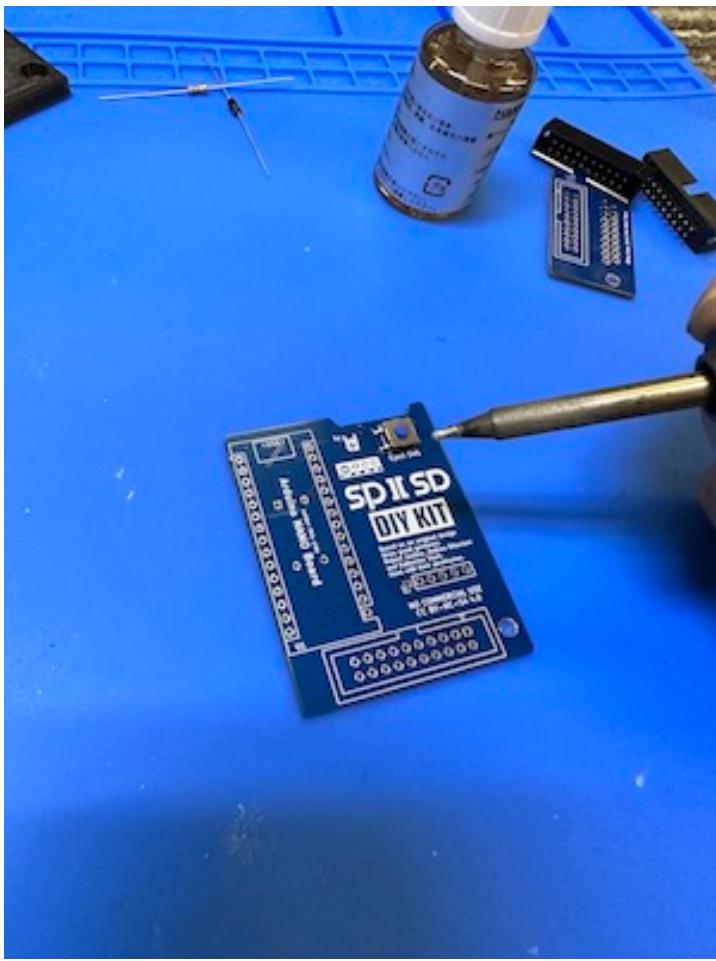


\*The 20-pin cable not included in the kit can be purchased on eBay or Amazon.

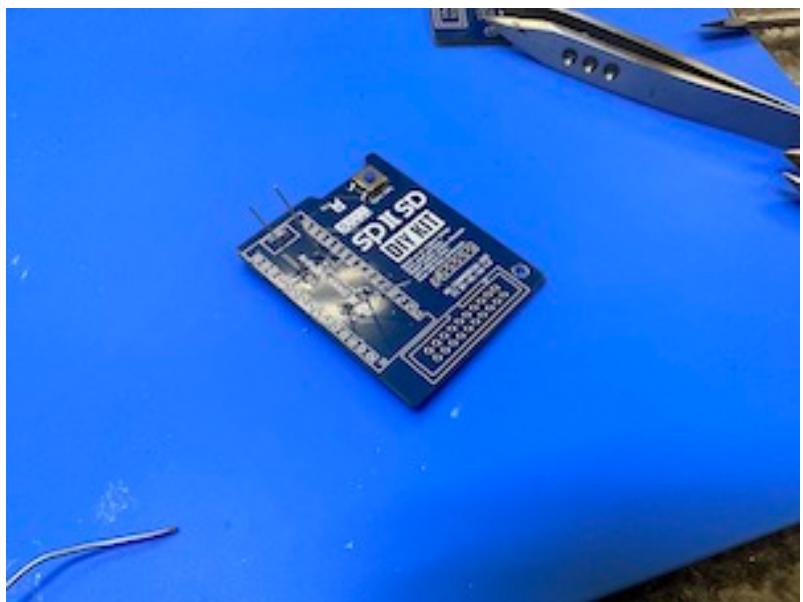
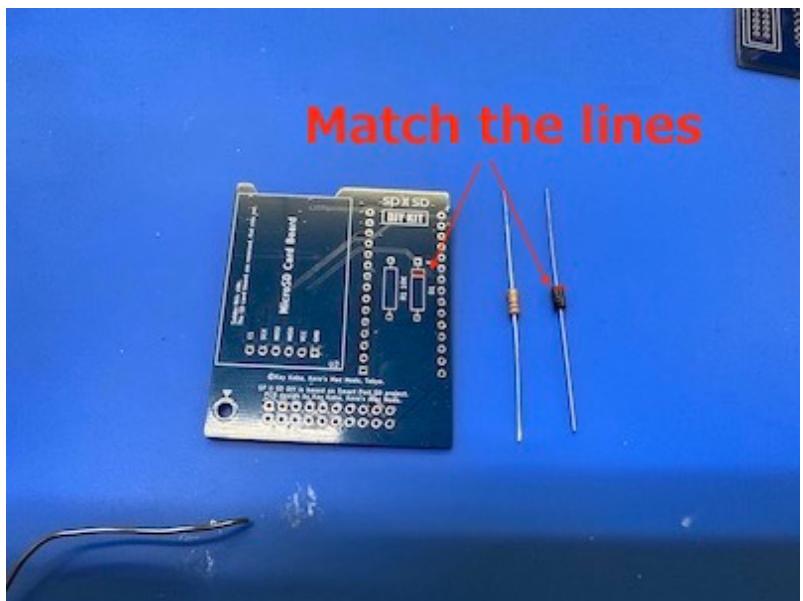
## How to build the SPIISD DIY kit

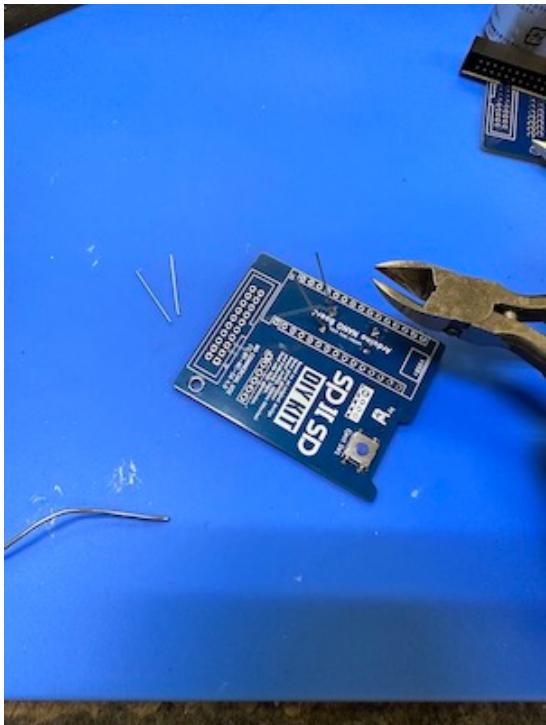
1, First, you need to work on PCB A, which will be the main board. Solder the 6mm push switch first. Only this switch is surface mounting for this kit. First, solder only one of the legs and position it, then apply an appropriate amount of flux and solder the remaining three legs.





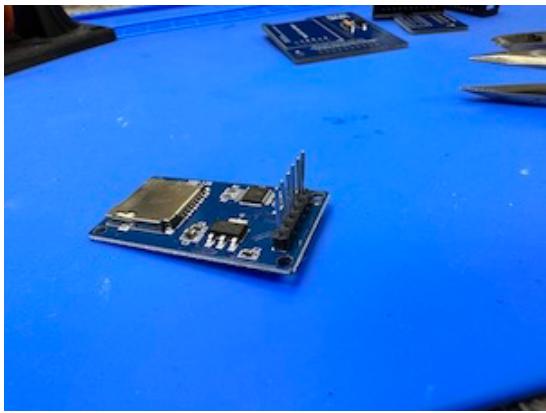
2. Next, solder a  $10\text{K}\Omega$  resistor and a diode 1N4817. The resistor has no polarity, and the diode ensures that the cathode and anode are in the correct direction. Install the diode so that the line on the body of the diode match the lines on the silk screen. If the lines are reversed, the diode will not malfunction, but it will not function because +5v will not be energized. After soldering, trim the excess legs.





3, Install the SD card board. This board is a little tricky, as it has a right-angle pin header. This time, the connection with PCB A will be straight, so straighten the pins.

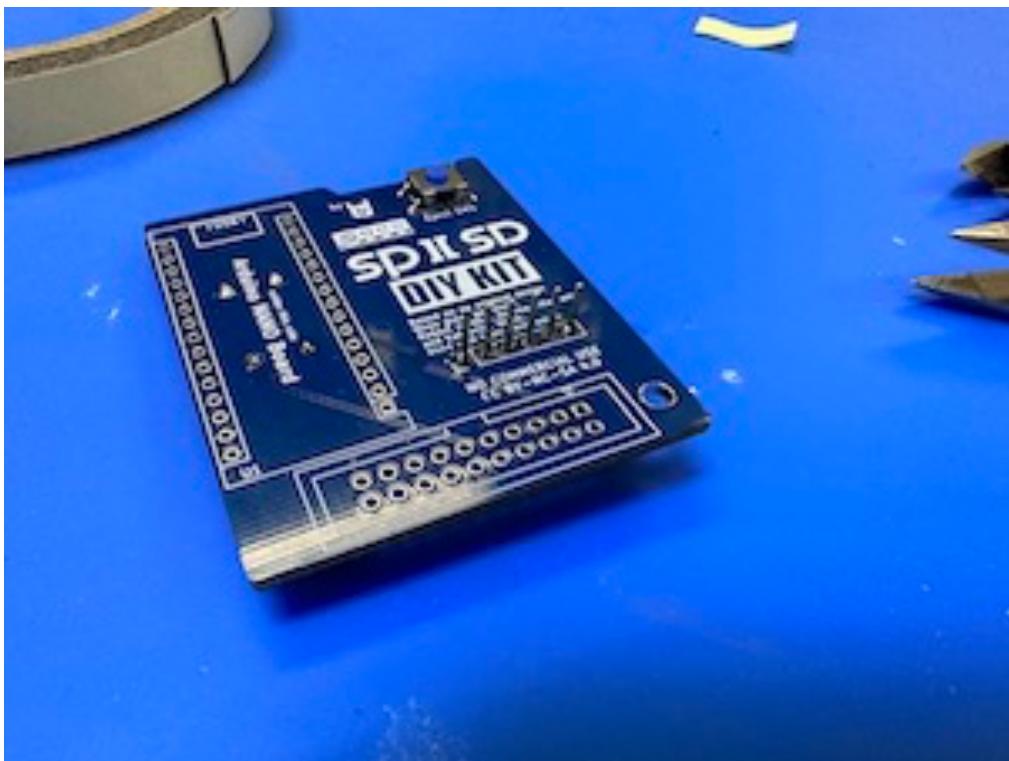
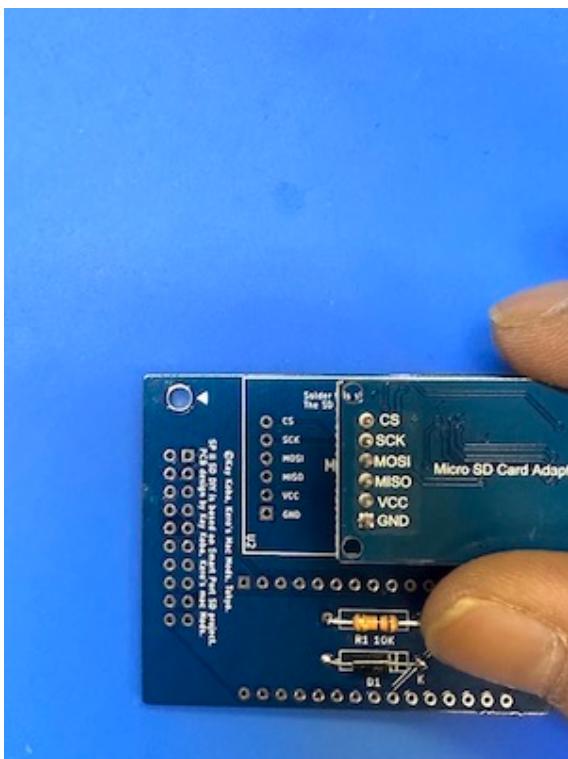


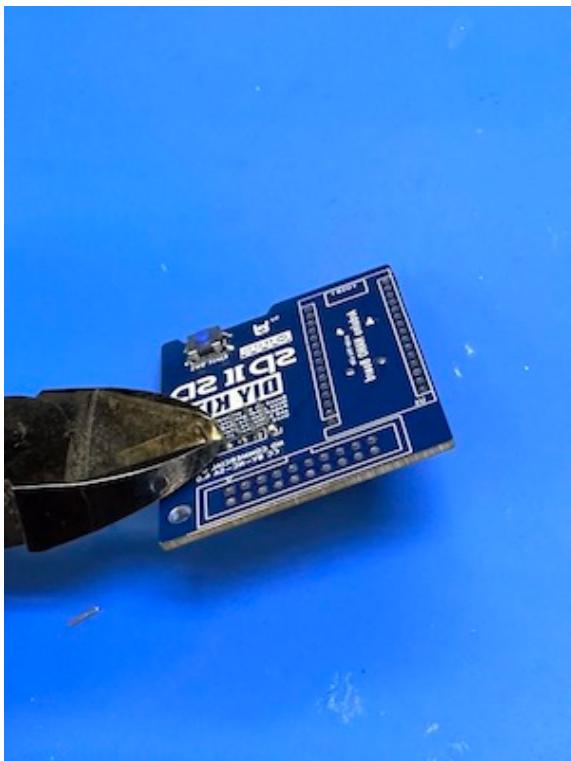


Place a little thick double-sided tape over the IC to hold it in place with PCB A. The pins will be soldered, so use the double-sided tape as a supplement.

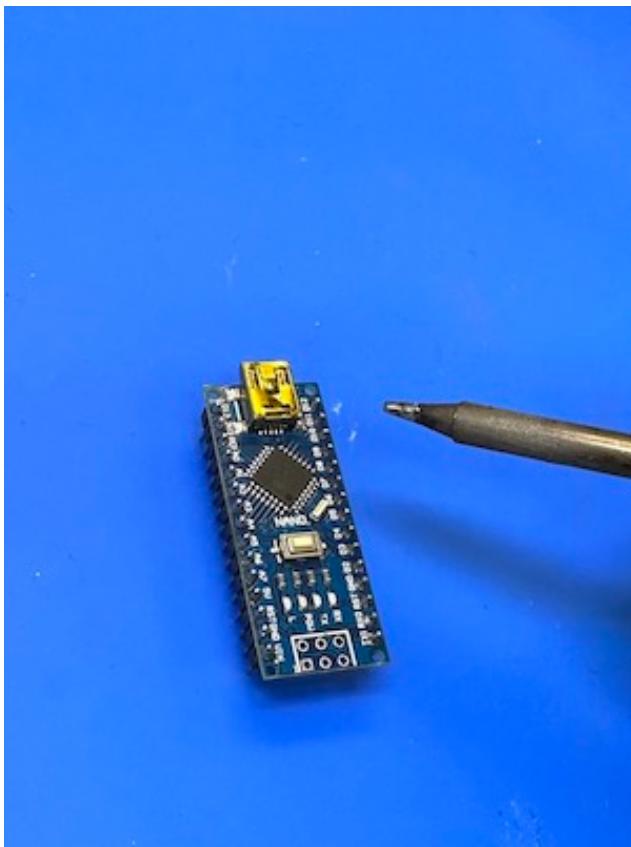


4. Once all pins are straight, solder the pins so that the silkscreen on PCB A matches the silkscreen on the SD card board. trim any excess pins.





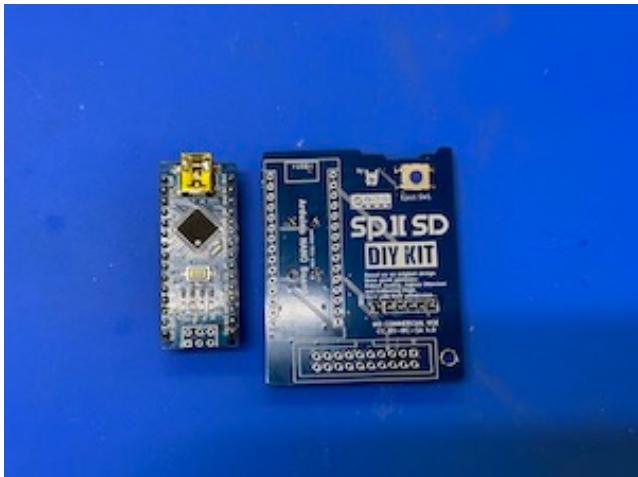
4, Attach two pin headers to the Arduino Nano board. Be careful not to tilt the pins.



6, Solder the Arduino Nano board to PCB A.

When soldering directly, the USB connector should be on top. This is critical if you make a mistake; it is difficult to easily remove the 30 pins.

Once soldered, trim any excess pins.



Tips: If you are unsure at this point, you can use an IC socket; the IC socket is not in the kit, but use the 32-pin socket and remove the above side 2 pins since we won't be using. Place them as shown in the following pic.



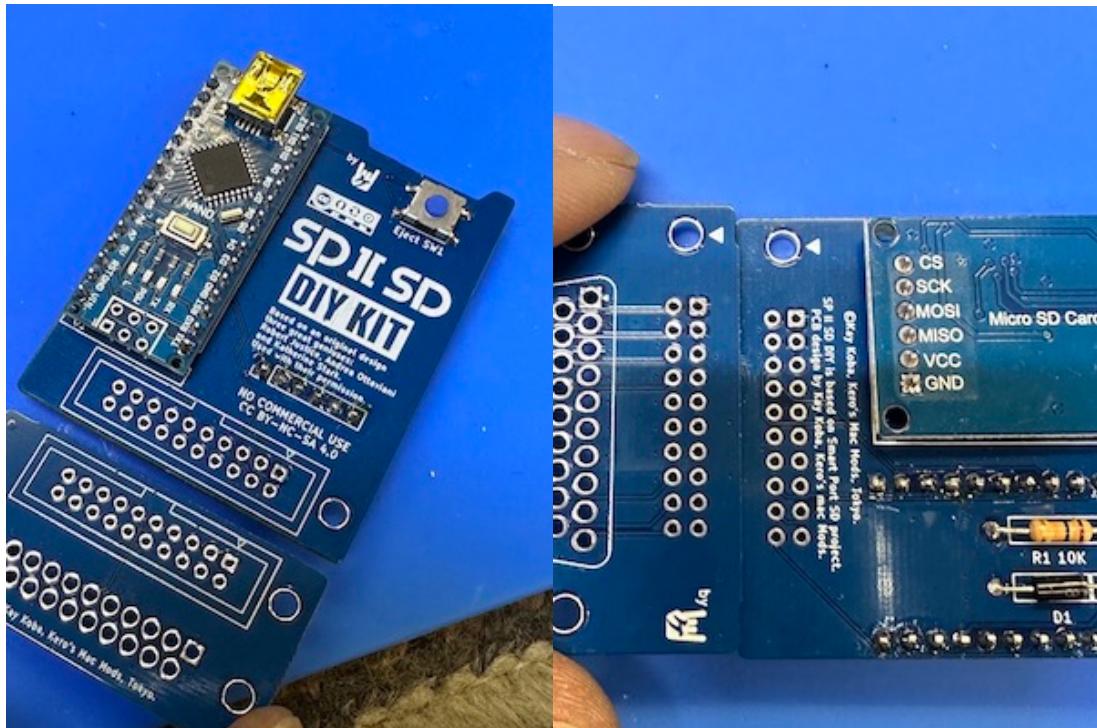
\*By attaching an IC socket, the Arduino can be instantly replaced in the event of a defect.

7, Solder the IDC20 box pin headers. Make sure the part comes to the silkscreen side with the pin header picture on it.



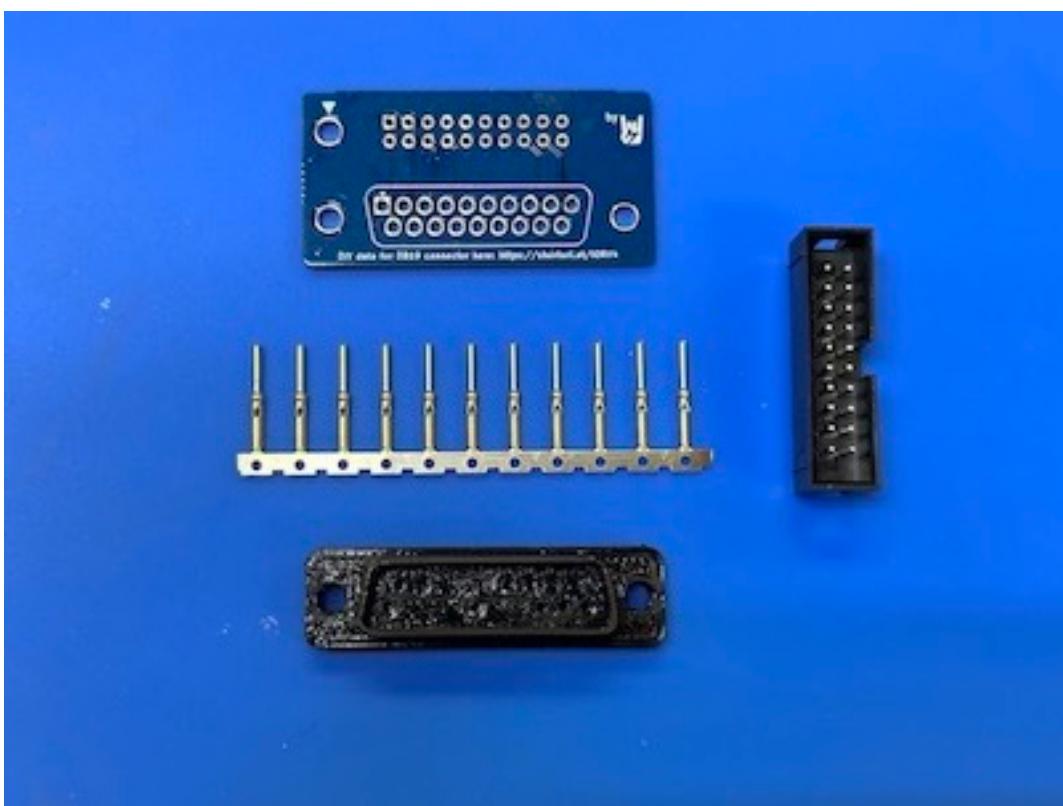


Another way to create this is to use a 2x10 pin header. In this case, make sure that the 3mm holes and ▼ match up. In this case, SP][SD will be placed on the back of the Apple without the use of cables.





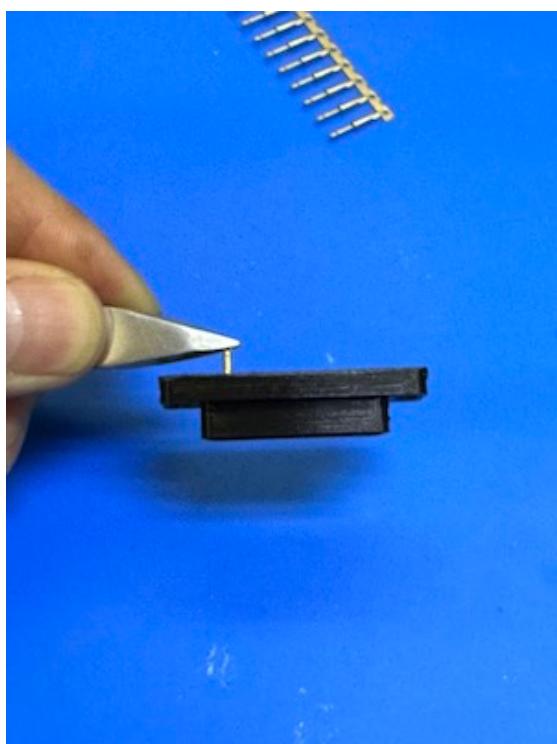
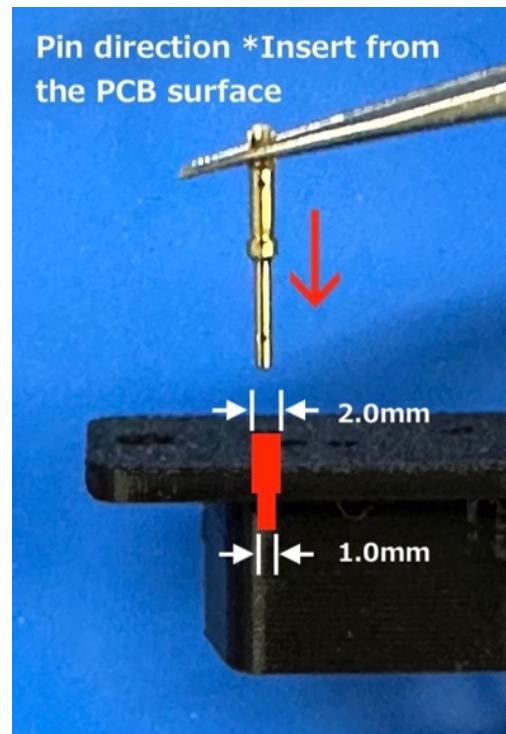
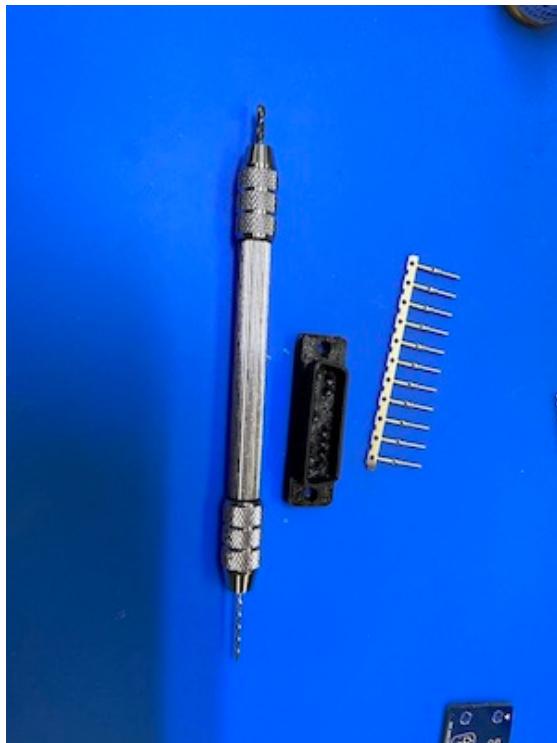
8, Next, make an adapter for db19 and IDC20 on PCB B.



9, Plant the 11 pins into the 3D printed connector. If you 3D printed it yourself, compensate the holes with 2mm and 1mm drill bits. If you bought the kit it is corrected by us.

**Note:** When inserting pins into the 3D printed connector shell, always insert the pins from the flat side (facing the PCB). The hole size is 2.0mm on the flat side

(for soldering the SPIISD PCB-B) and the hole size on the other side is 1.0mm and narrower on the connector side (for inserting into the AppleII DB19 female connector).



It may be very frustrating when inserting a pins into the PCB, but please look at it from the side and correct them with tweezer as you insert them.



10, Place the connector on the db19 ring side of the PCB silkscreen.



Solder pins to PCB. Make sure that all 11 pins are the same height.

Then, solder them. Do not apply the soldering iron for more than 2 seconds. The solder temperature is about 350 degrees Celsius.



11, Then solder the IDC20 box header. Make sure the part comes to the silkscreen side with the pin header picture on it.



Check for bridges or lack of solder and you are done!



Notes: We often use IPA (isopropyl alcohol) to remove residual flux. \*Experienced users would often prepare an IPA bath to clean the PCB... but be careful as 3D printed connectors are prone to warping and shrinking with alcohol. Use a small amount of IPA and avoid touching the 3D printed connector. \*We have pointed out that the connector may become stiff when inserted or removed.



if all goes well you'll be an Apple II master!

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