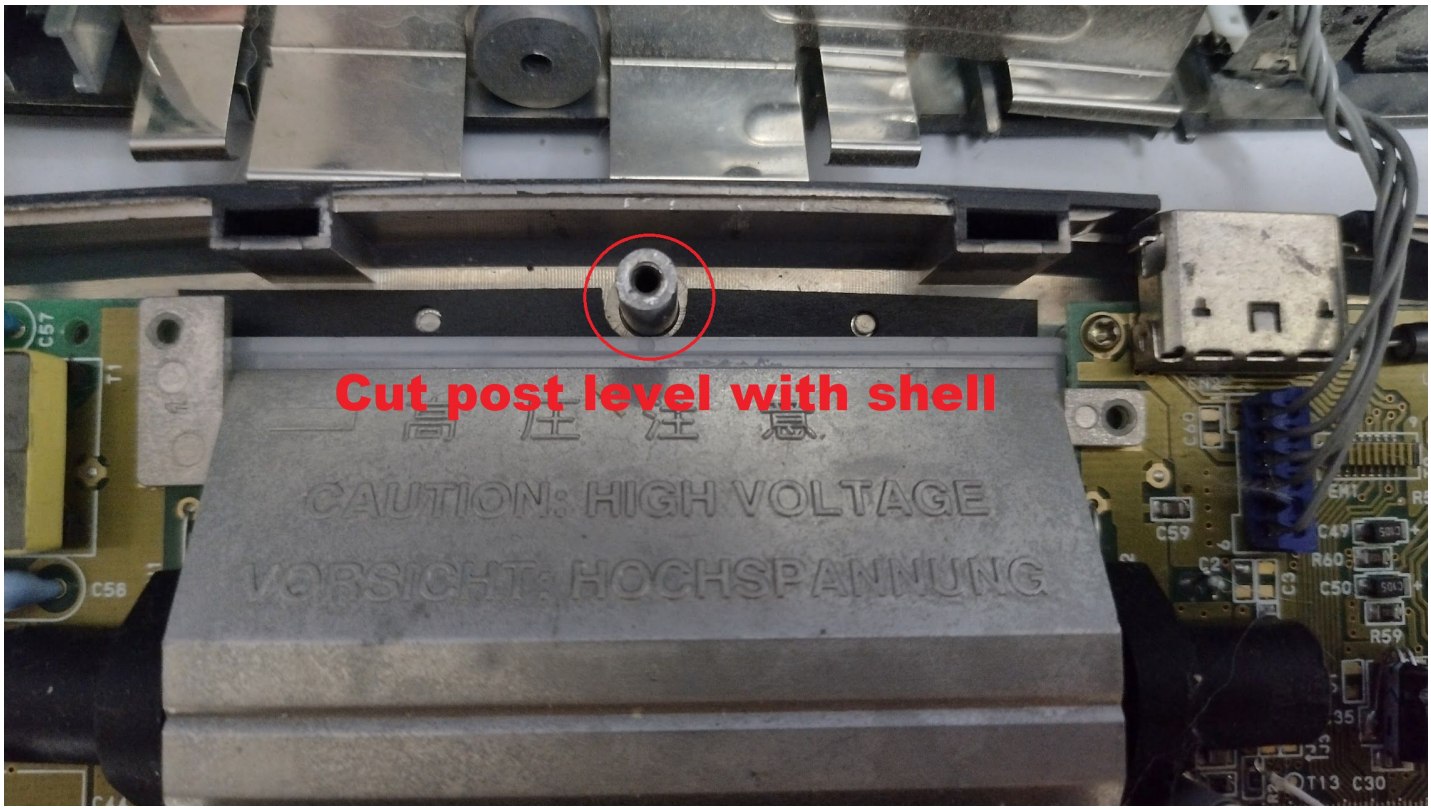
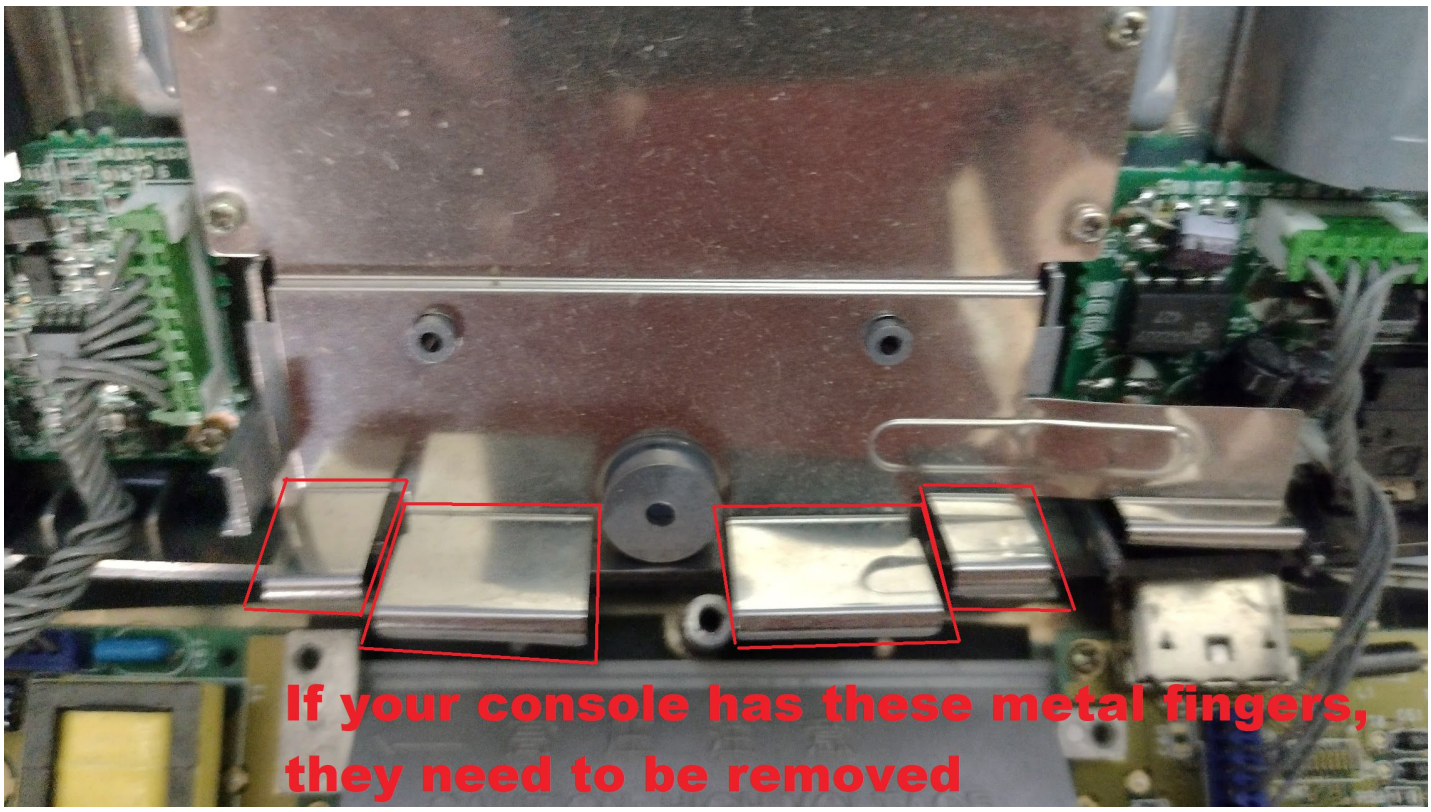
BennVenn GameGear IPS ribbon install – VA0/VA1 IPS and GGHD

Remove the High Voltage Inductor. This will disable the High voltage circuit originally intended for the backlight lamp

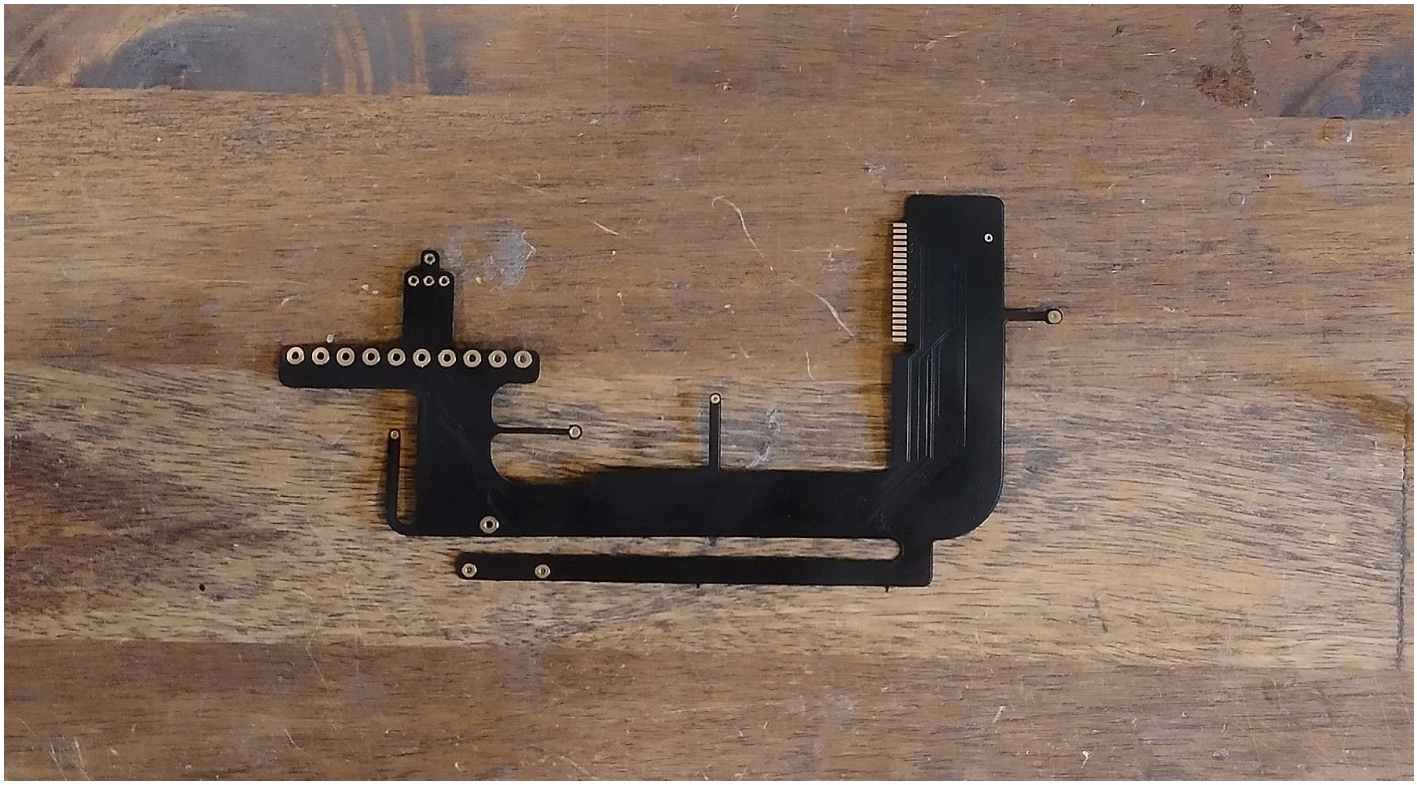
Remove the Lamp, original LCD and reflector. Do NOT tear the LCD ribbon from the motherboard. Apply flux and heat and lift one pad at a time. Consult our YouTube install video for more details.



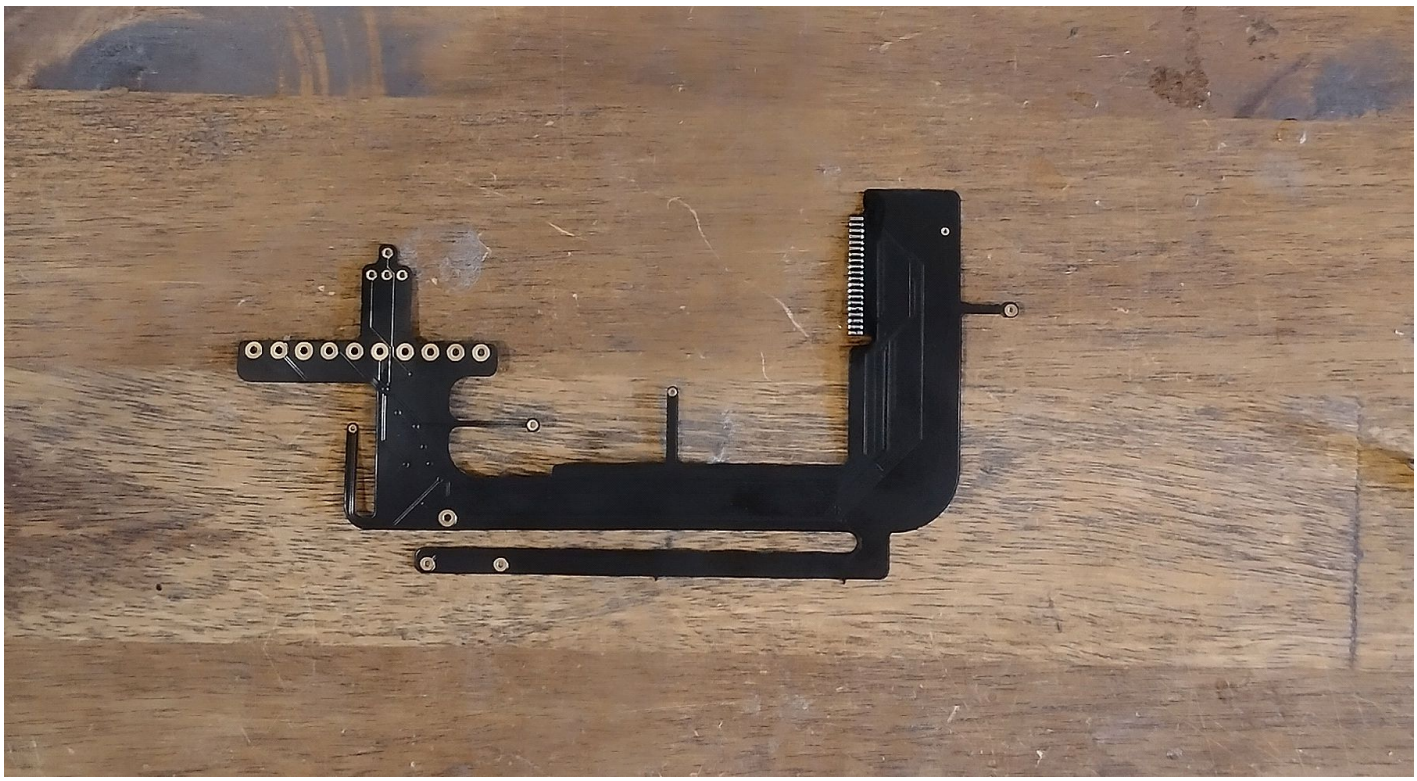
Trim this post with wire cutters (wear eye protection) until it is level with the shell. Remove the black rubber gasket that sits between the original LCD and the front shell half.



Remove these metal fingers that originally touched the backlight tube cover.



Place ribbon upside down, apply flux to the row of fine gold pins. Apply solder (a process called tinning) to make soldering easier during install. It should look like this:



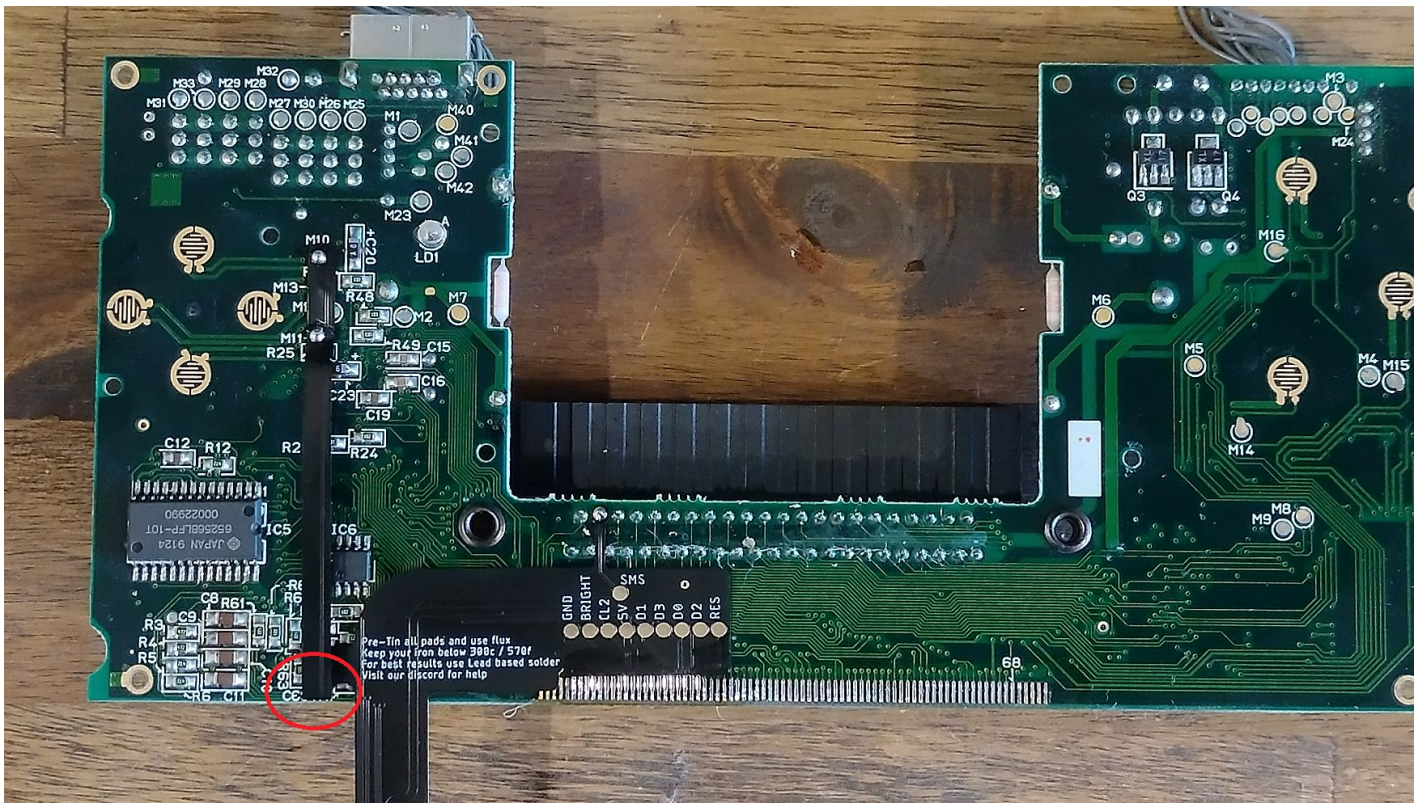
Take note of where Pin1 is on the motherboard. Some motherboards do not have the 5 gold fingers before the #1 pin marker. Trust the Pin1 marker.

Place the ribbon with the small loop over the second pin on the top row of the cart connector. This is the SMS detect pin. Apply solder to this pin to anchor the ribbon in place.

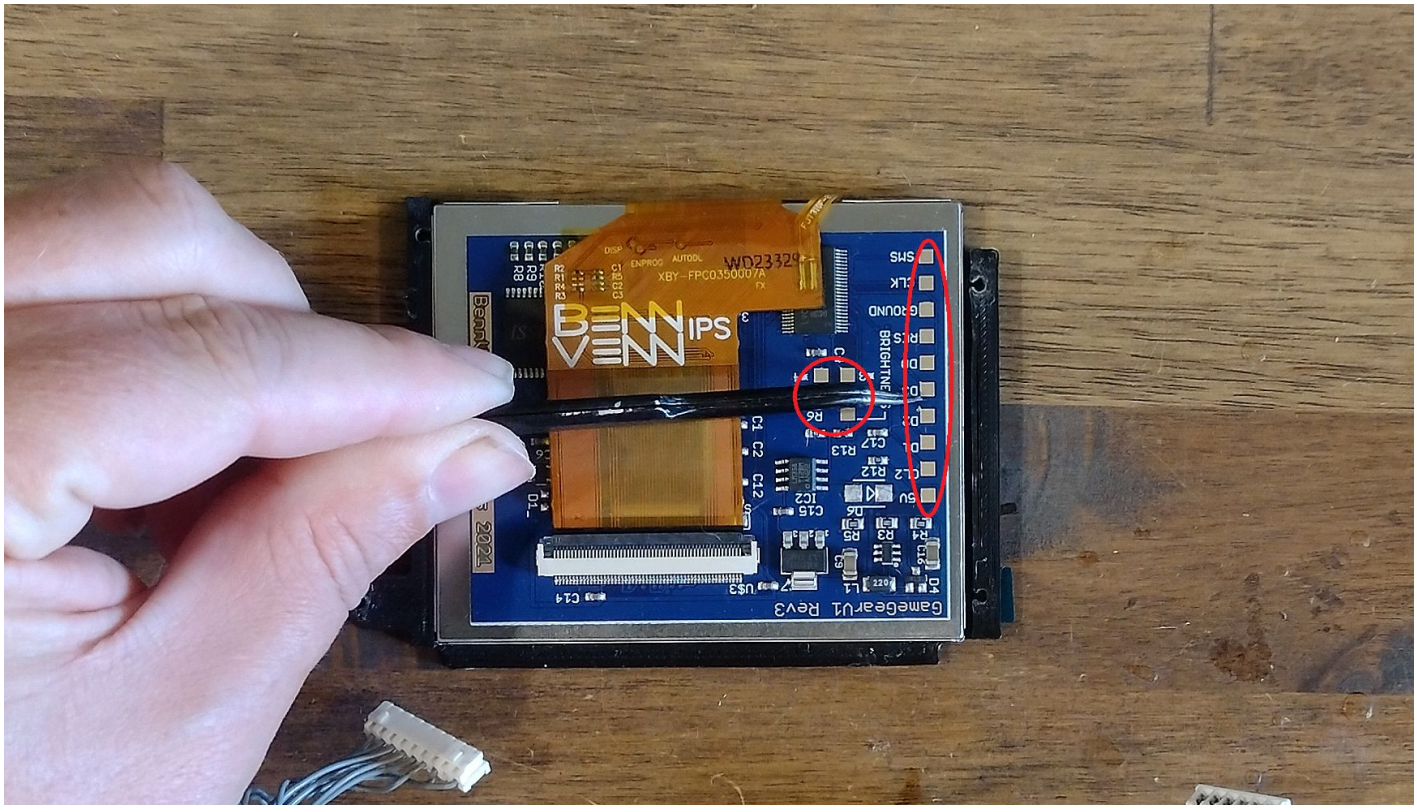
With the first gold finger of the ribbon on top of the pad marked #1, you can now add flux and solder the ribbon into place. Flux will help prevent pads bridging with solder. If they do, apply flux and a clean iron and it'll wipe away. Keep your iron below 300deg C or damage to the PCB and ribbon will occur.

Locate pads M10 and M11. These are the Up and Down button signals.

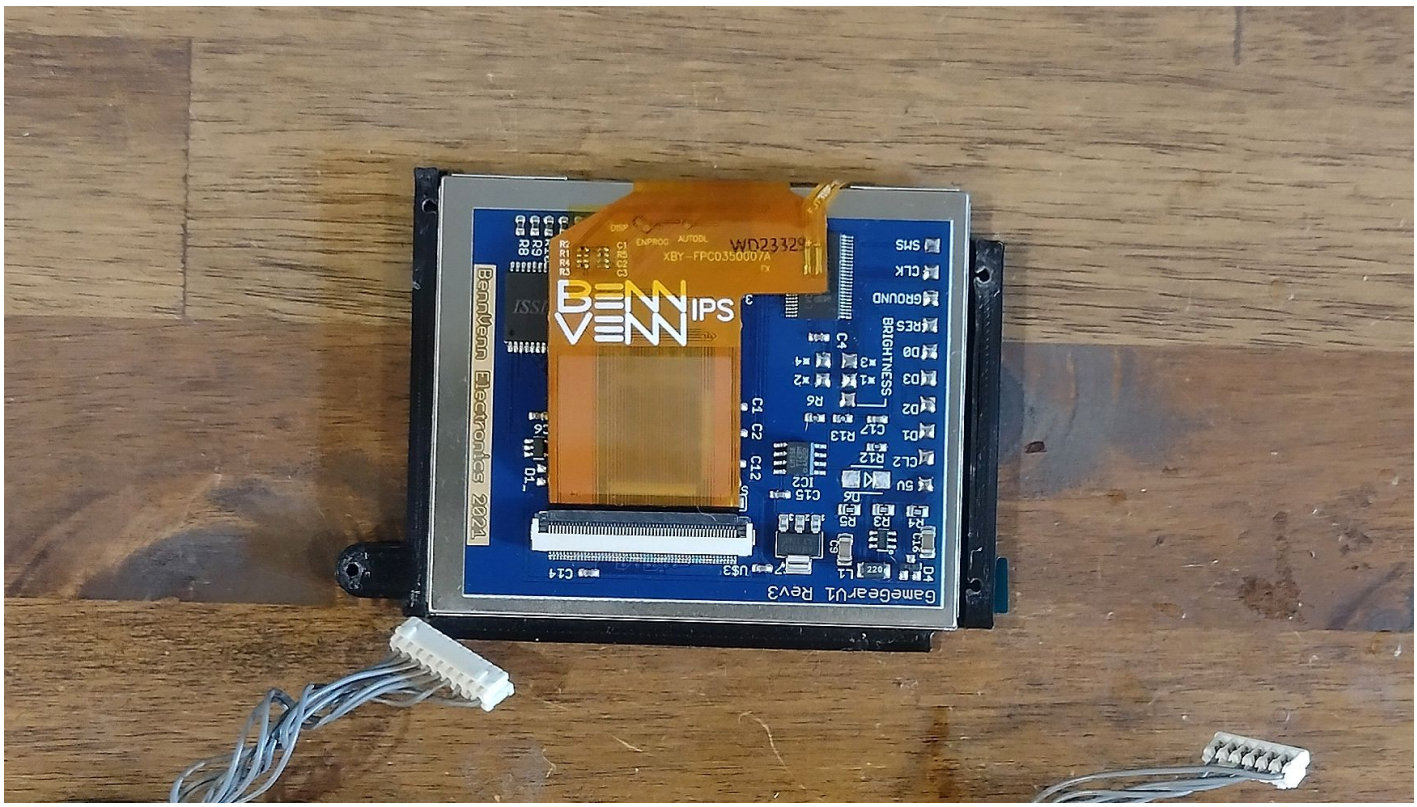
Fold the small ribbon back and solder down to M10 and M11.



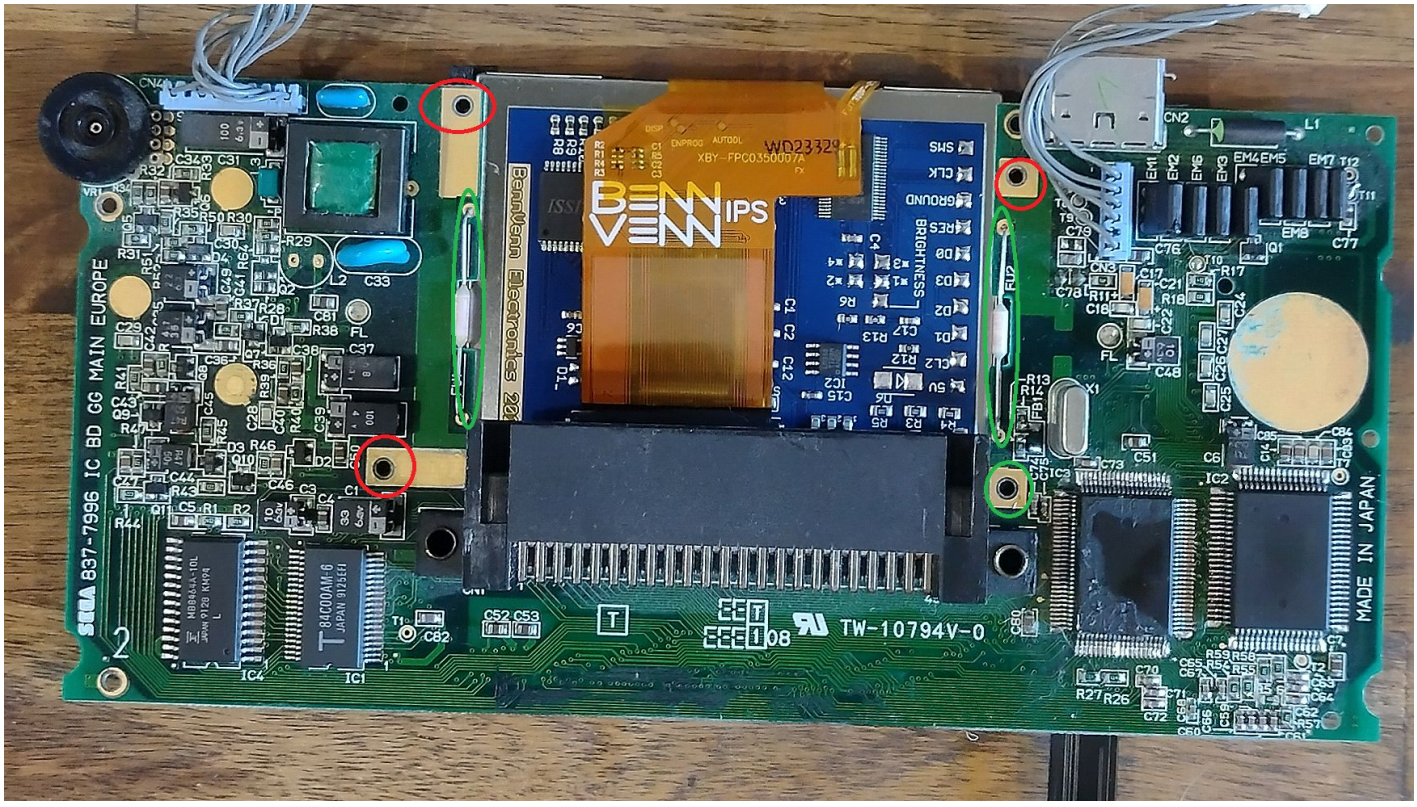
Apply light pressure here with your finger to place a small crease in the ribbon. You can also place kapton tape for mechanical strength



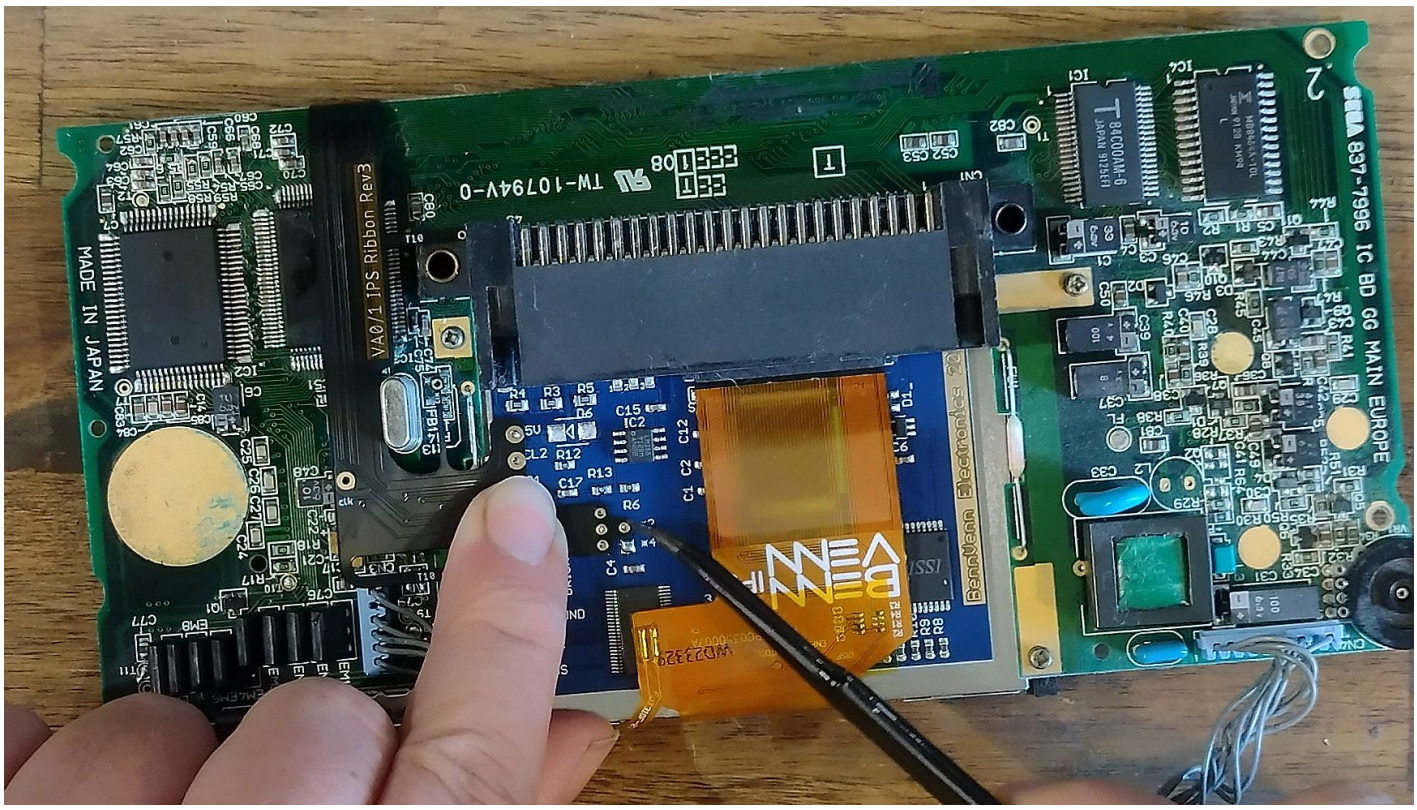
Just as we did with the ribbon, we will need to tin the gold pads circled above. This will ensure a reliable solder connection when soldering the ribbon to this PCB. Failure to do this will result in a garbled image, or no image at all.



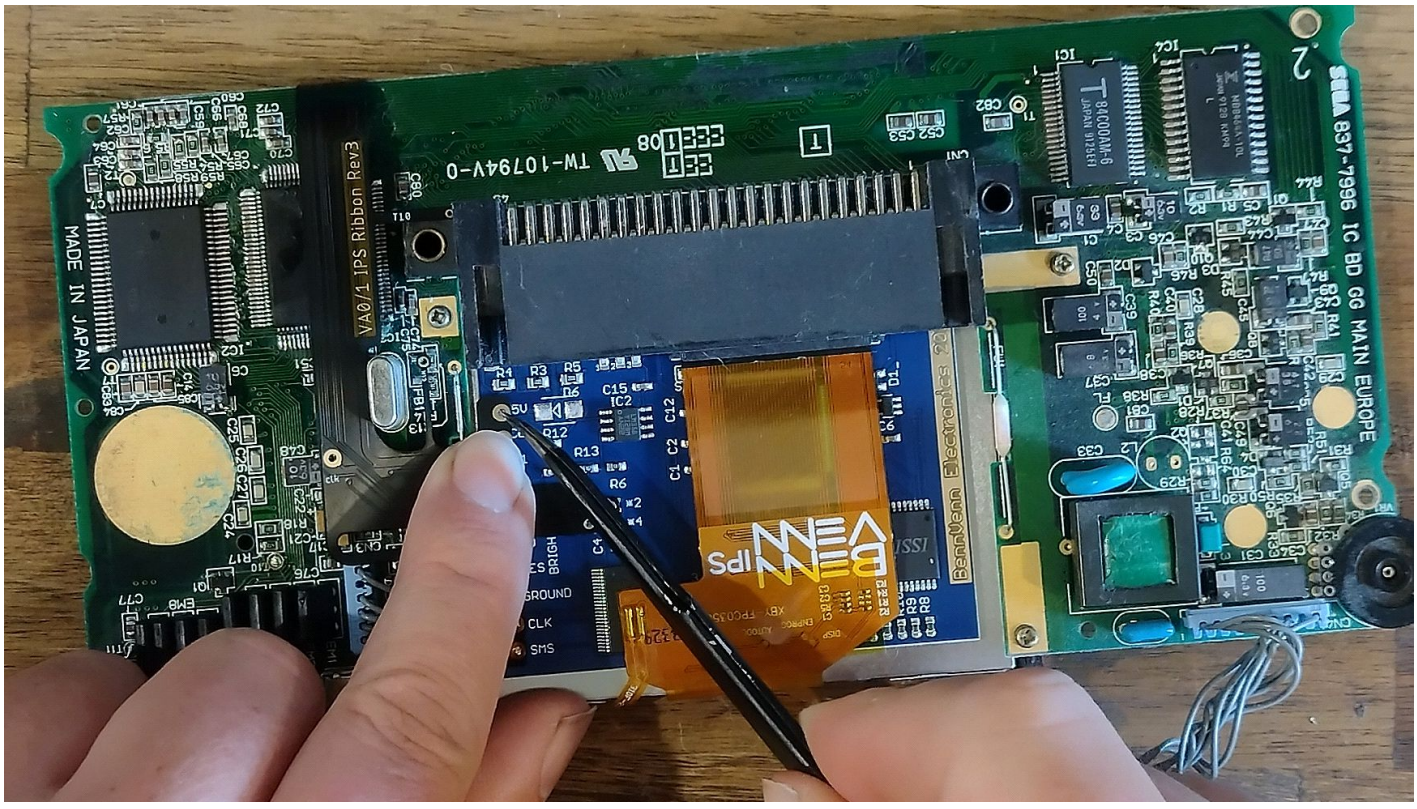
Your PCB should look like this when done. **NOTE! DO NOT EVER USE THIN LIQUID FLUX OR IPA ON THIS DISPLAY. IT WILL RUIN THE IPS PANEL**



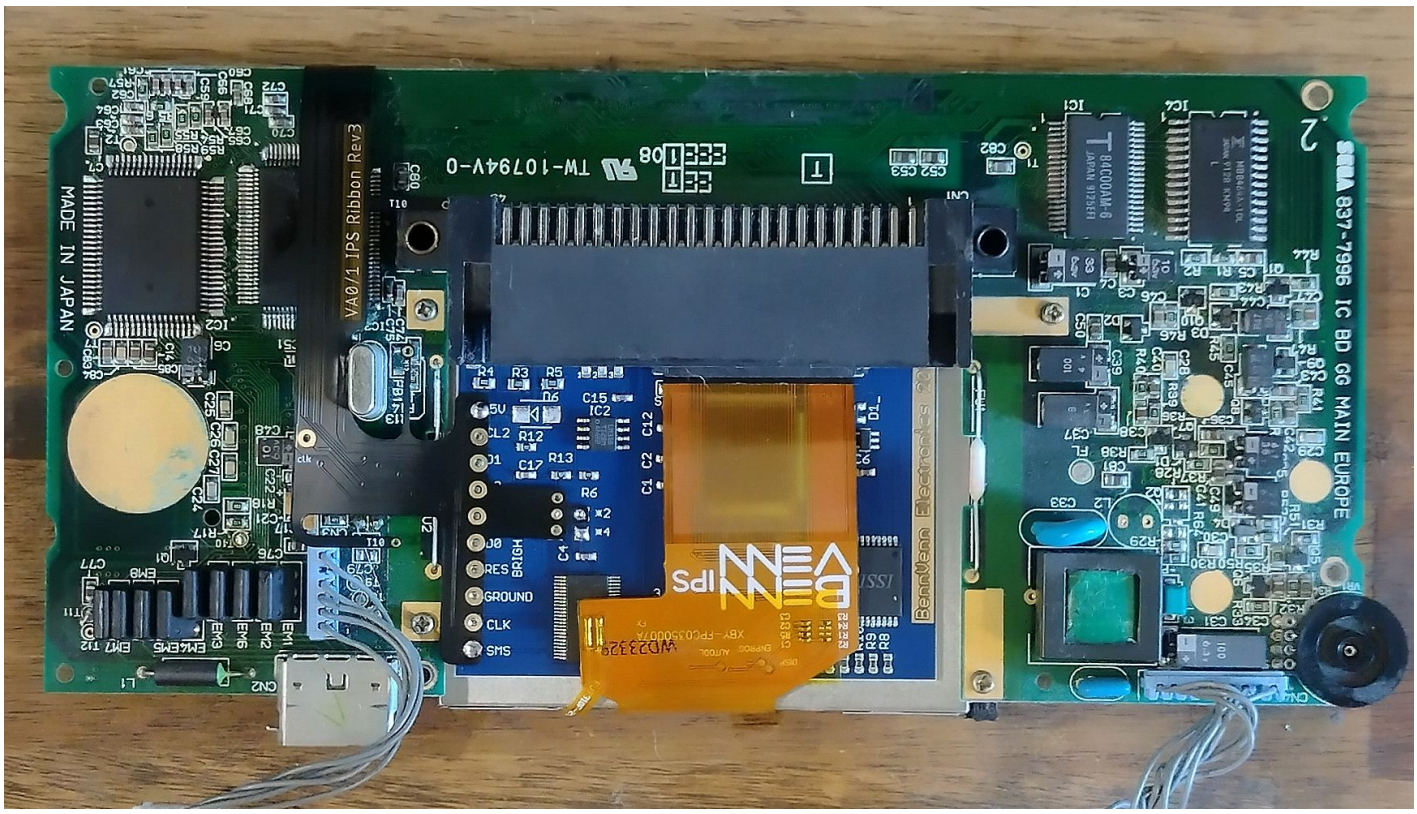
Align the motherboard so all 4 screw holes line up and place the original screws from the old screen to secure the new screen. Note the fuses (circled in green) are still in position. This is to keep the IPS panel dead-center. If you remove these fuses, alignment will be a little harder. They are not used electrically.



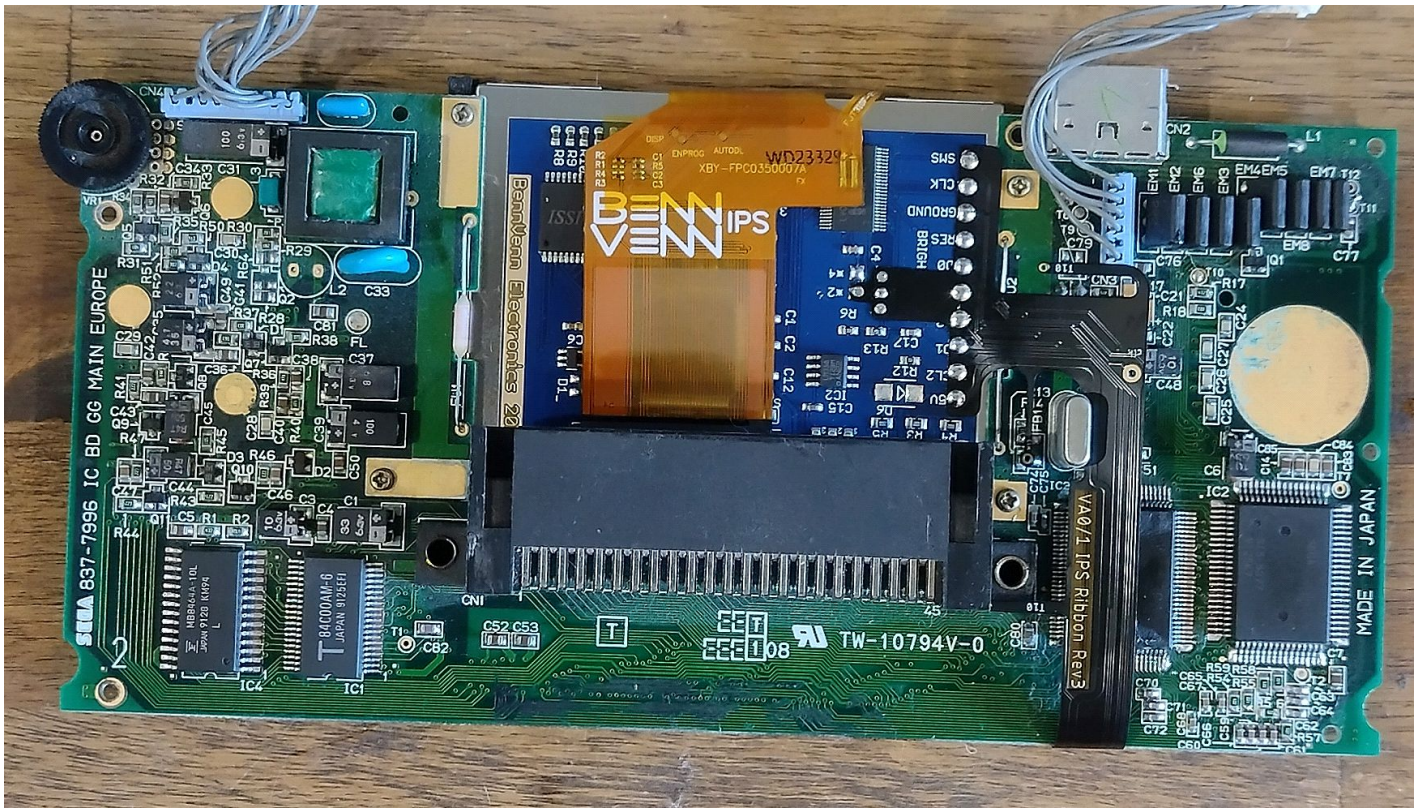
Fold the ribbon over the component side of the motherboard. Align the ribbon over ALL PCB solder pads, apply solder to the pad marked above (*2)



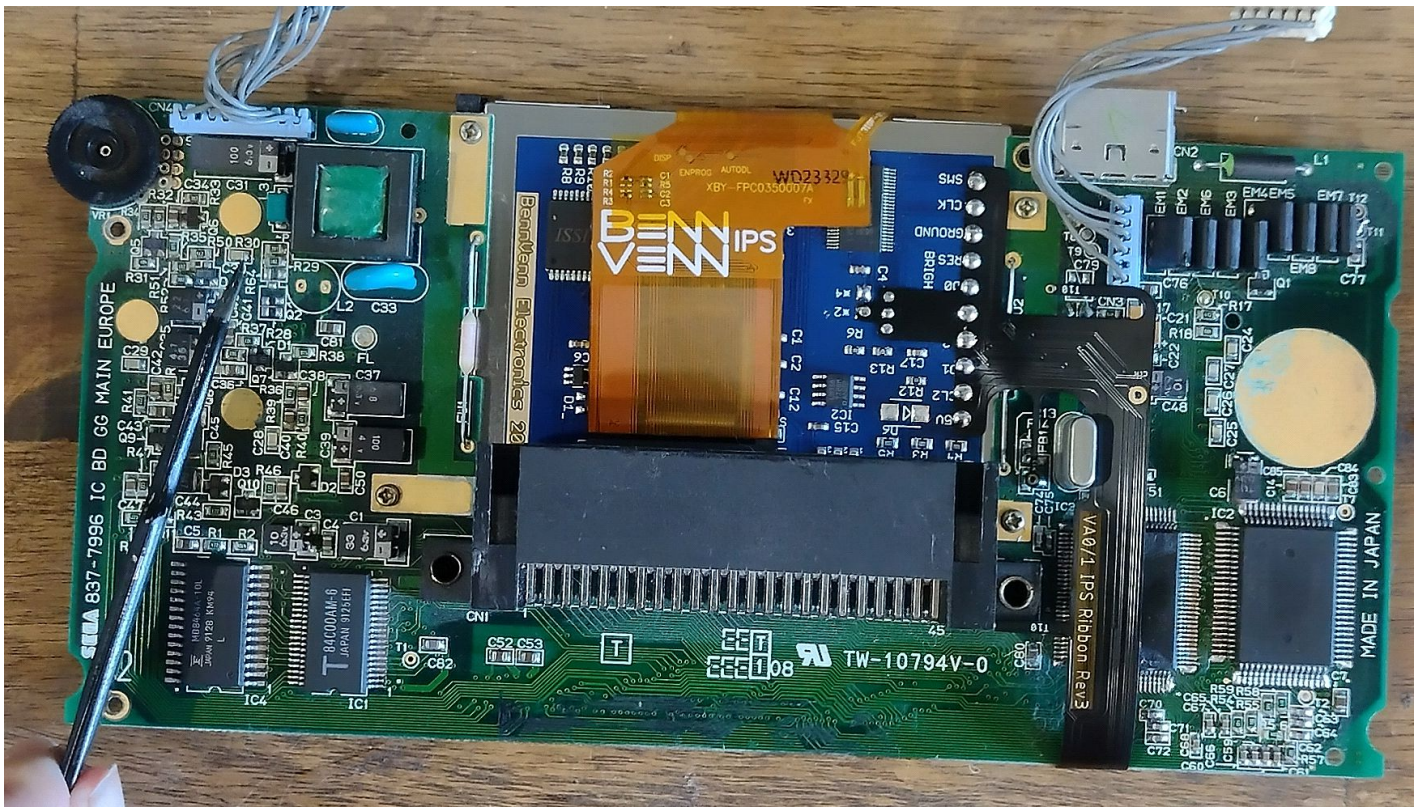
With the ribbon still carefully aligned, apply solder to the 5V pad marked above.



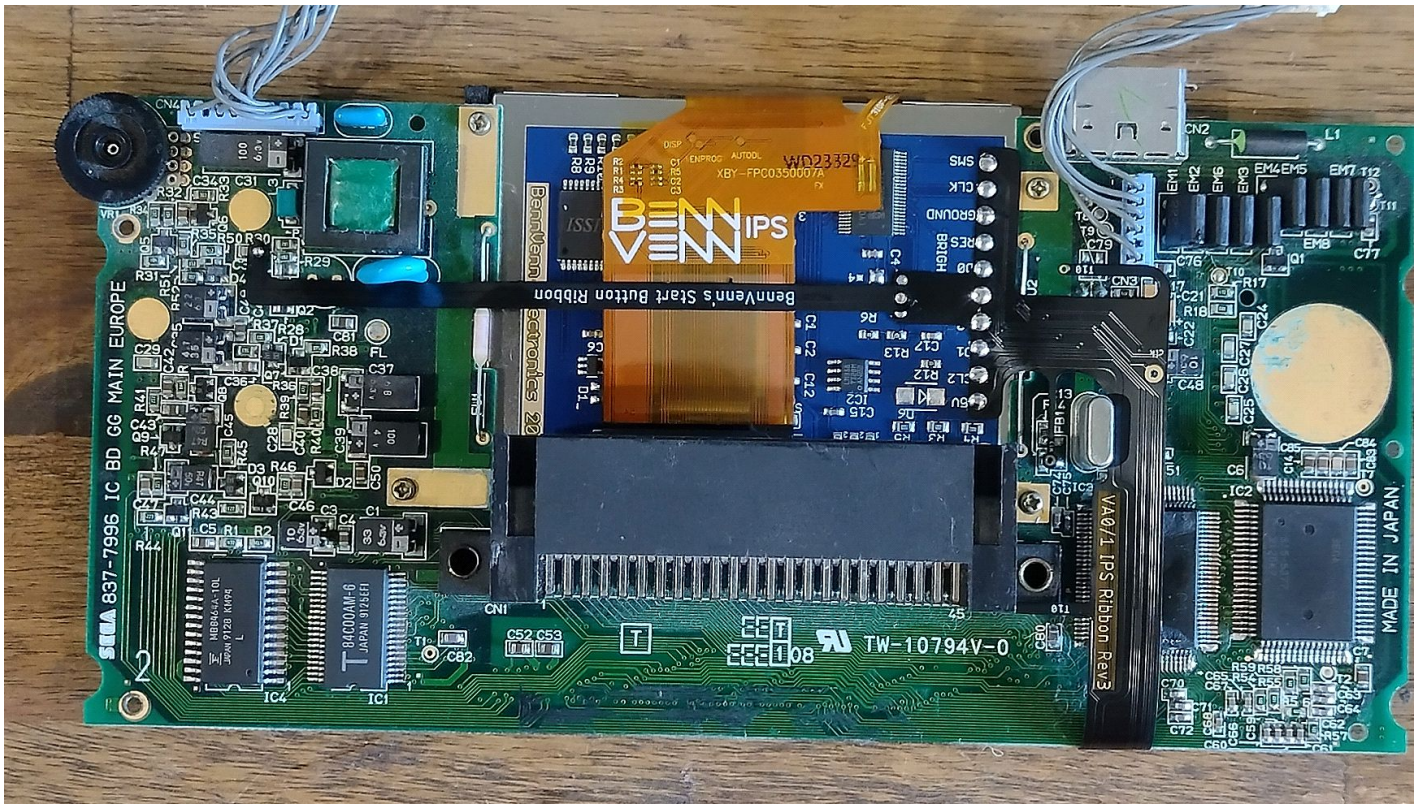
Next apply solder to the lowest pad marked **SMS**. If all pads are still aligned, you can now solder the remaining pads. If any are out of alignment, now is the time to fix this.



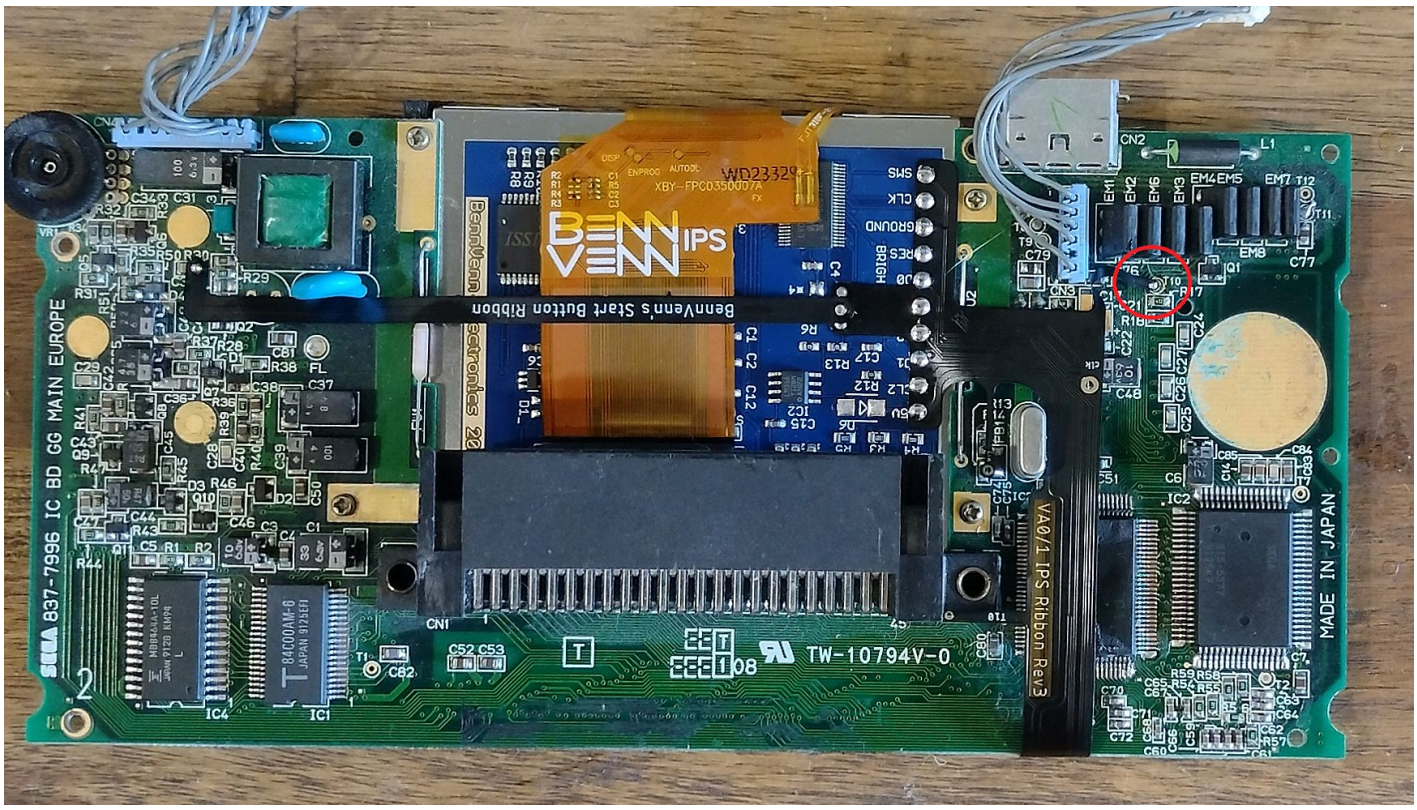
Once all pads are soldered, it is time to solder the Start button ribbon.



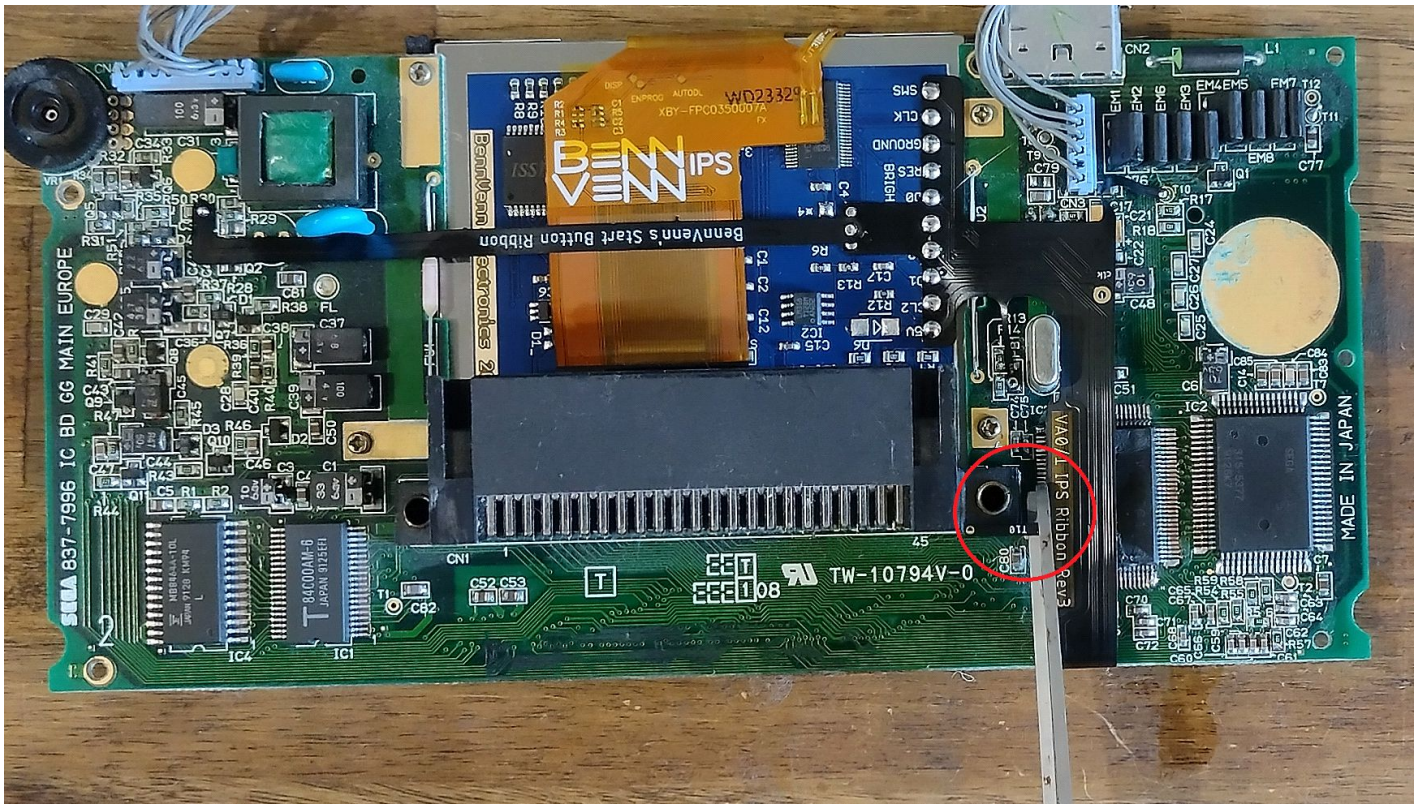
The component designation changes between GG models though it is always this Capacitor, and it is always the right hand side. Tin this side of the capacitor.



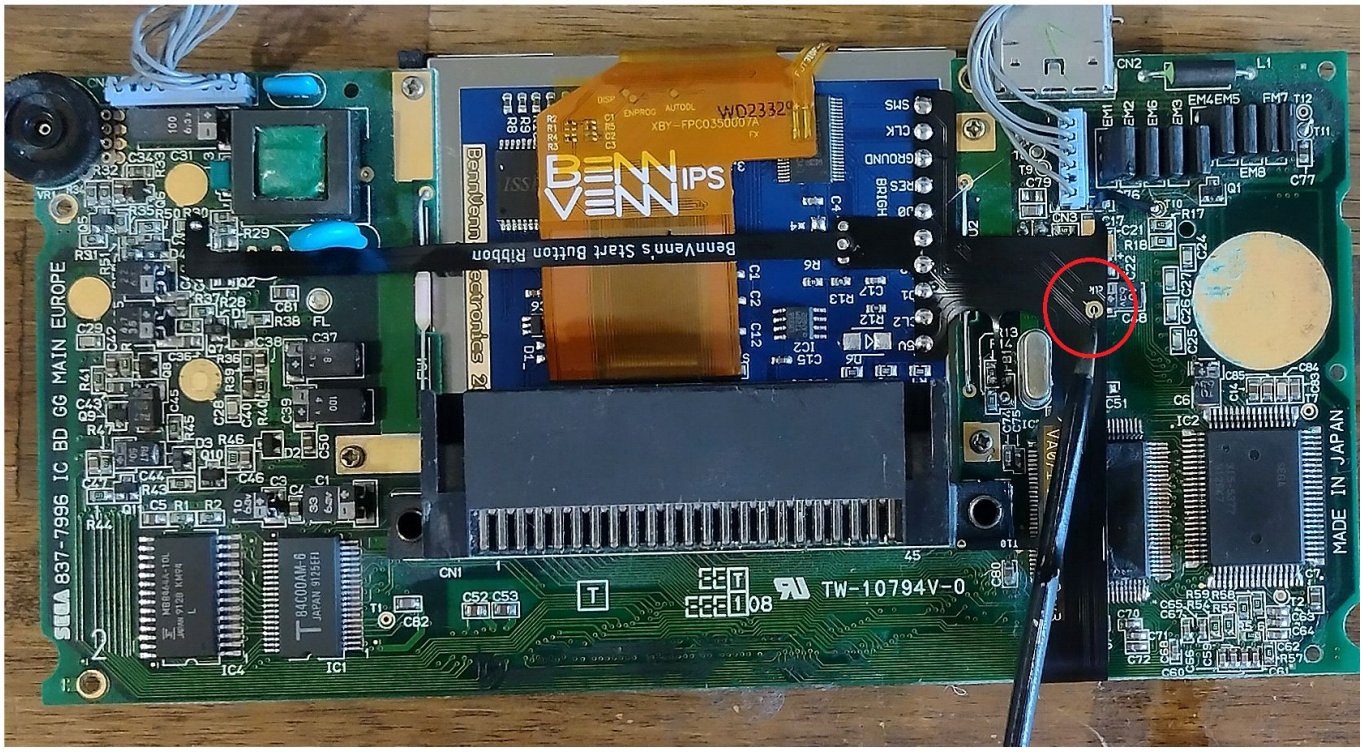
You can now solder the start button ribbon into place as above.



Fold the small flex arm labelled T10 over to the pad marked T10. Don't forget to tin the T10 pad on the motherboard before soldering.

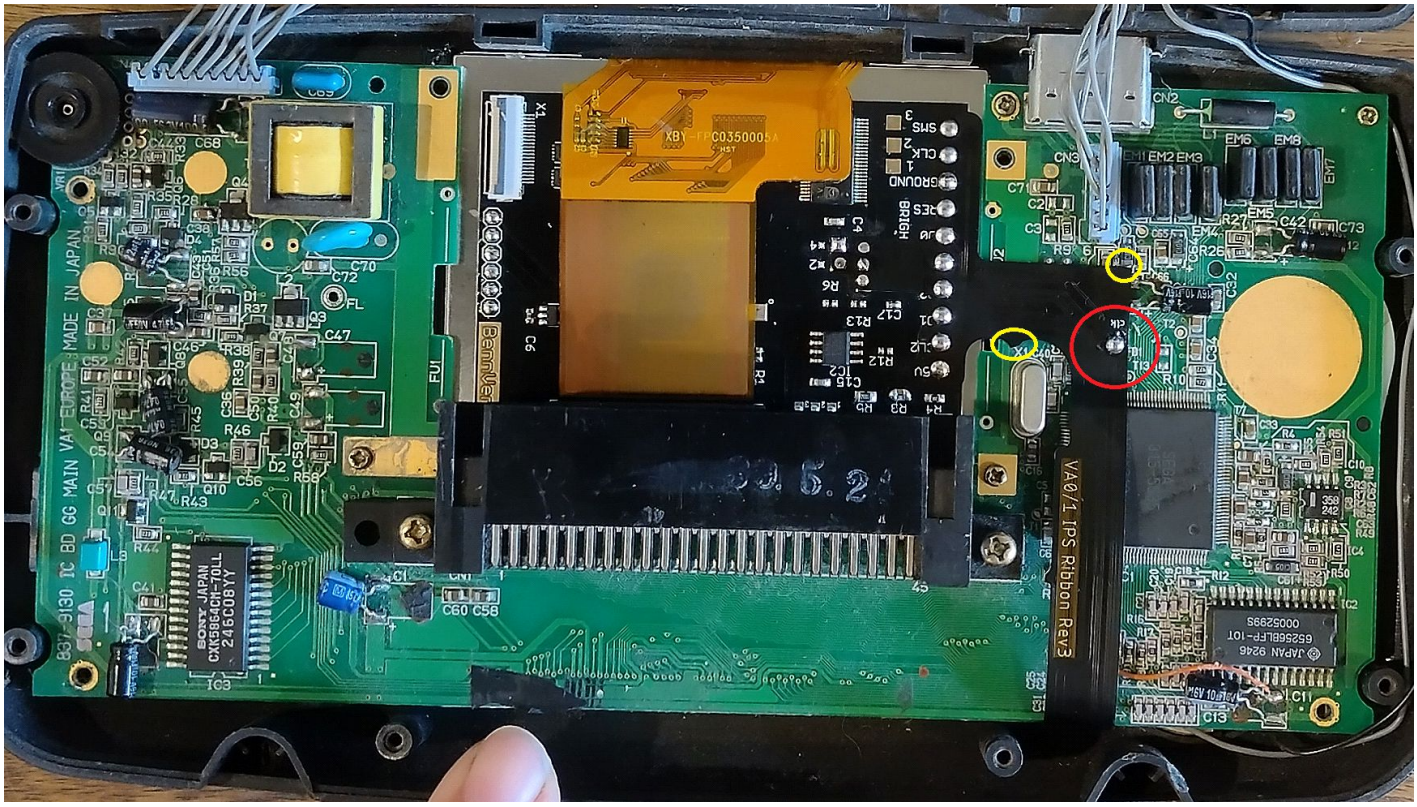


The secondary T10 arm circled above is not needed on a VA0. You can cut it off or insulate it. If installing into a VA1, you can cut the alternate T10 pad off the top of the ribbon. More pics below regarding VA1 consoles.

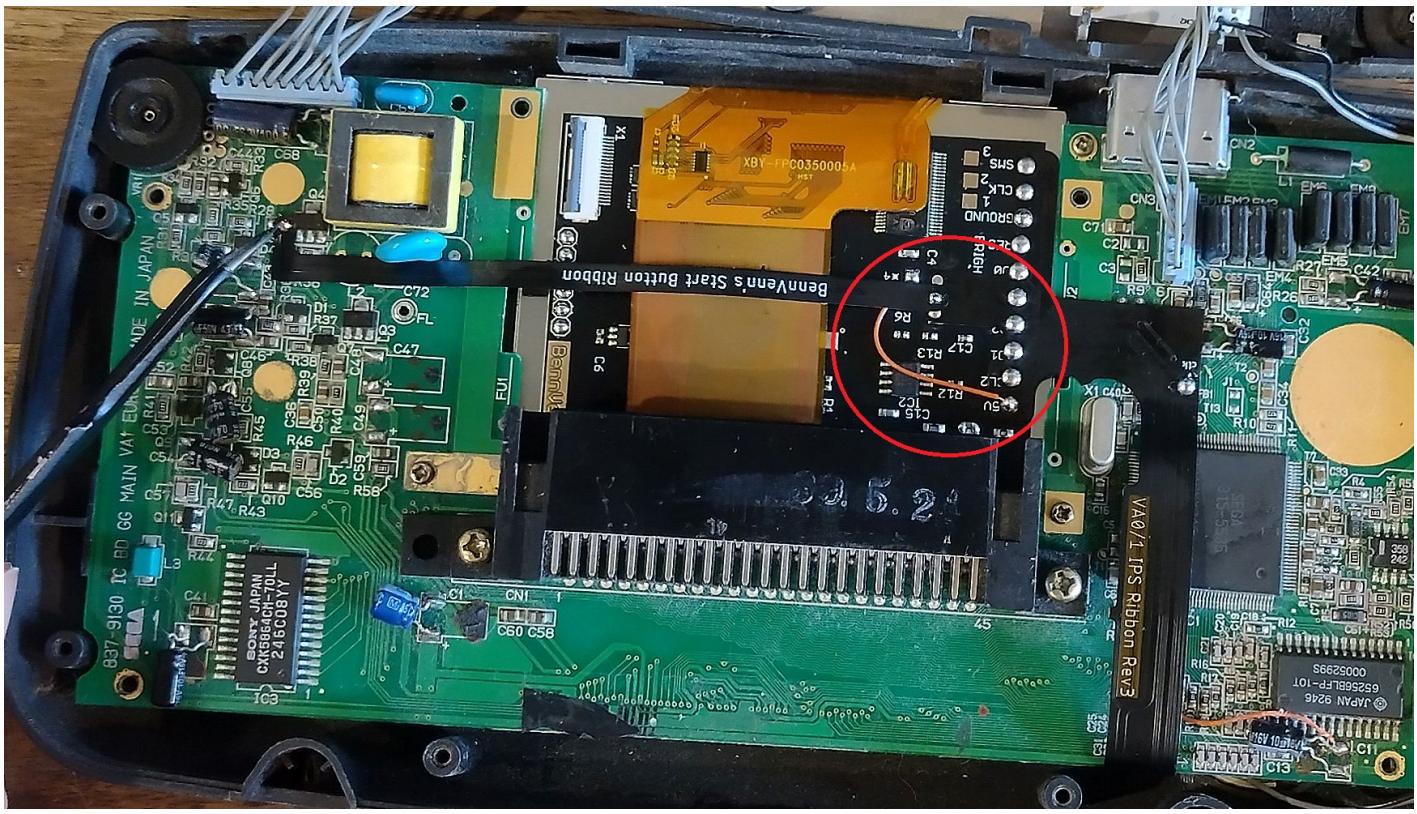


The CLK pad circled above is again for a VA1 console, you can insulate this pad with tape. On a VA1 motherboard, you would solder this to the pad **FB1** directly beneath it. More pics below regarding VA1 consoles.

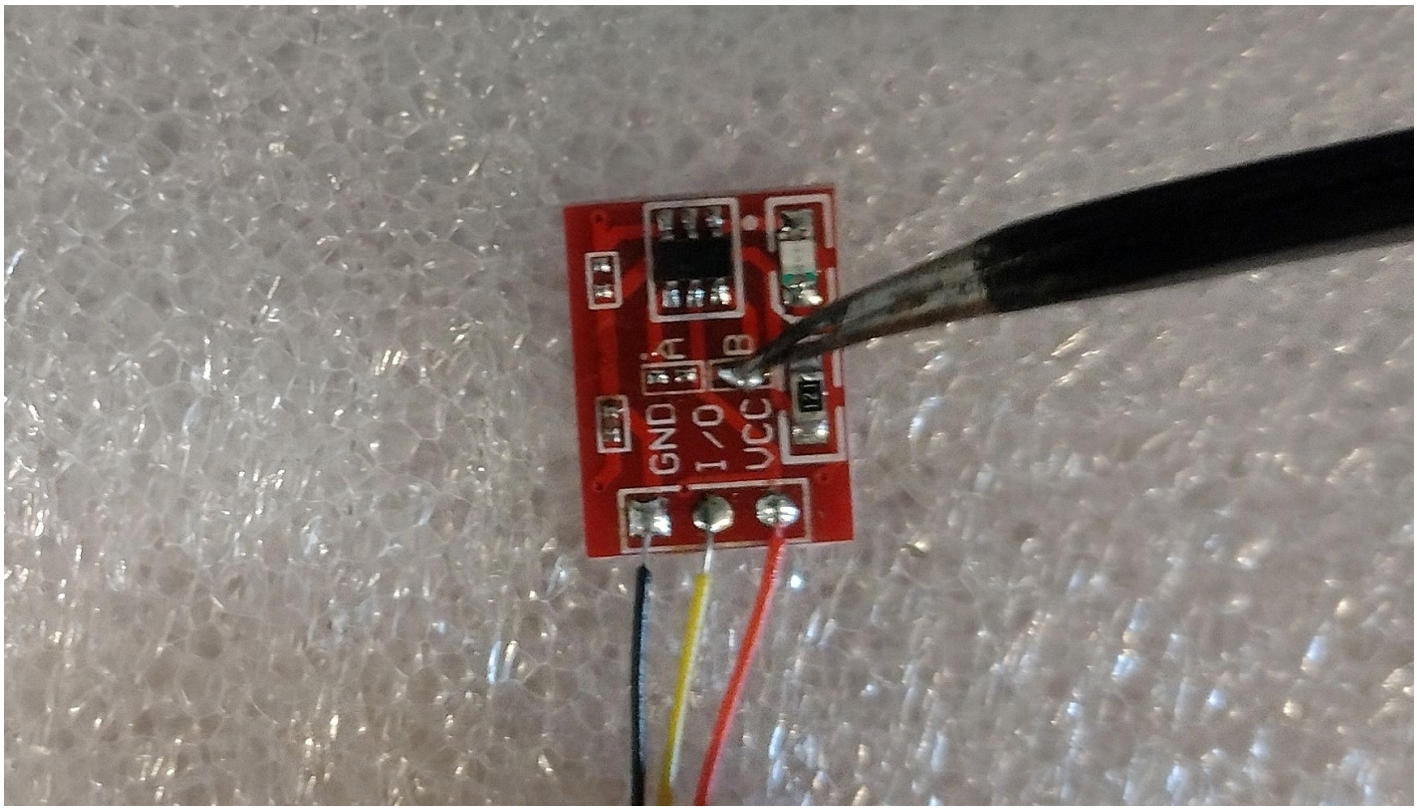
The alternate Clock connection for VA0 motherboards will be soldered to the left hand side of the tall metal can (crystal). Usually you will find a pad called FB1 though on very early models you will find only a pair of resistors. Solder the CLK arm between these two resistors.



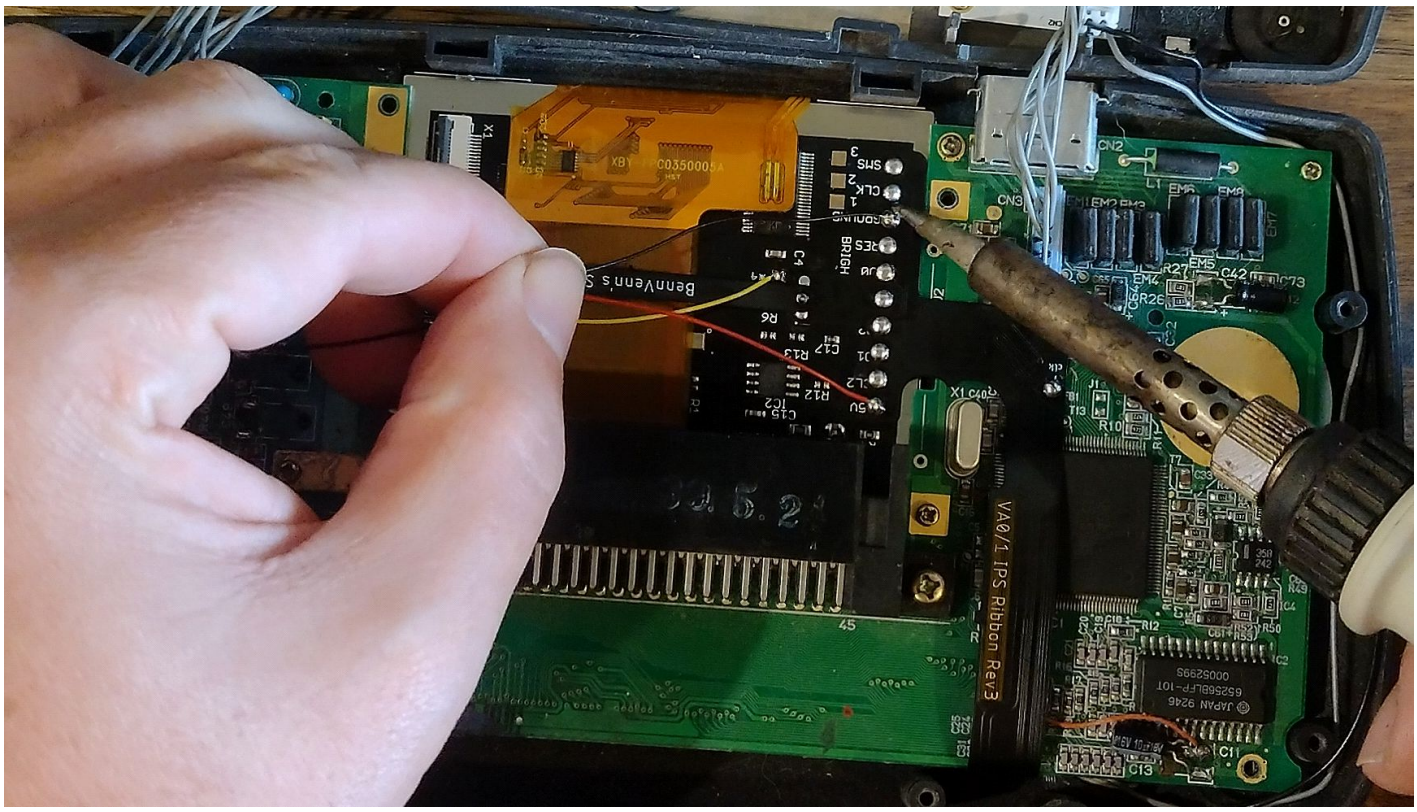
Above is a VA1 install - note the yellow cut-off sections and the CLK solder pad.



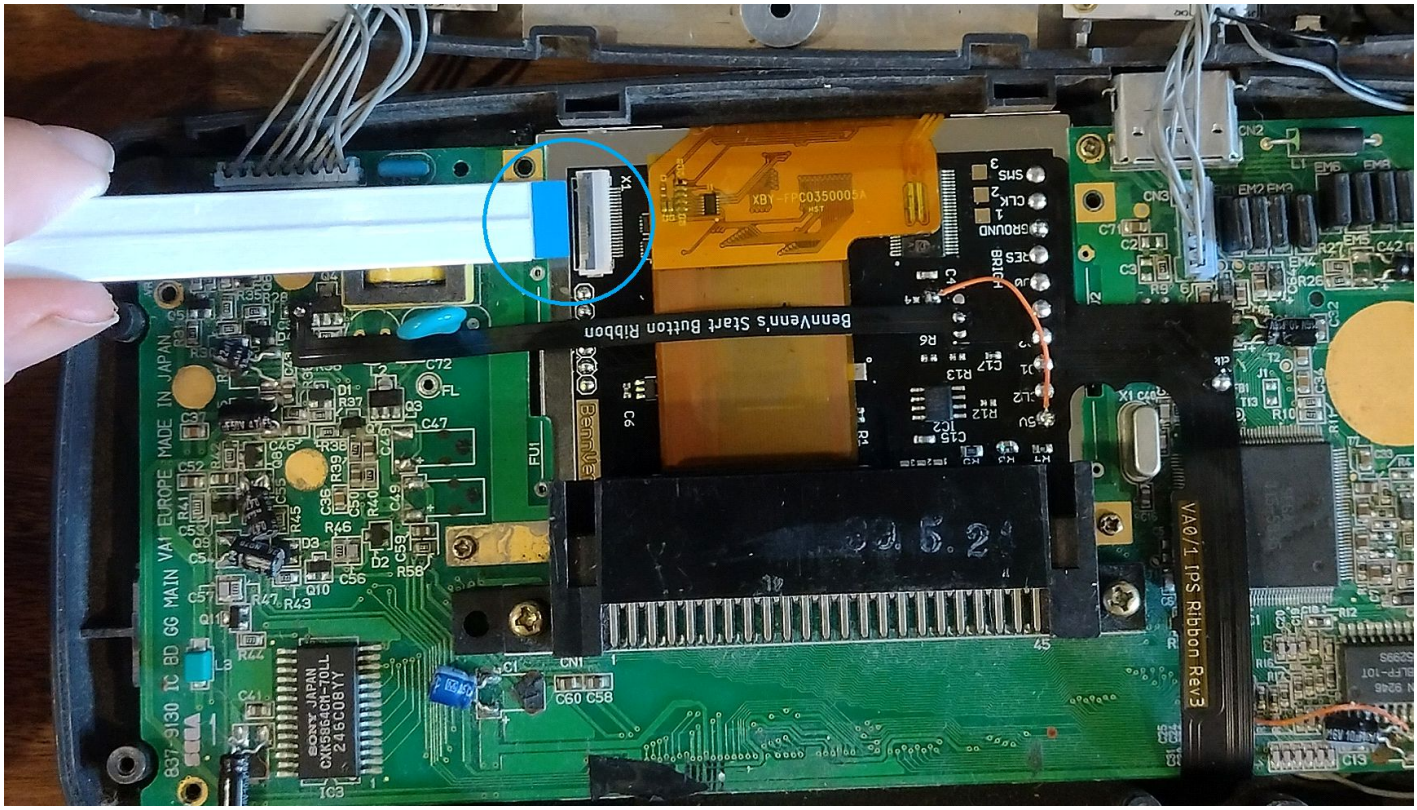
If you do not wish to install the touch module on the GGHD kit, you can connect pads ***4** to **5v**. Note the images below only apply to the GGHD kit.



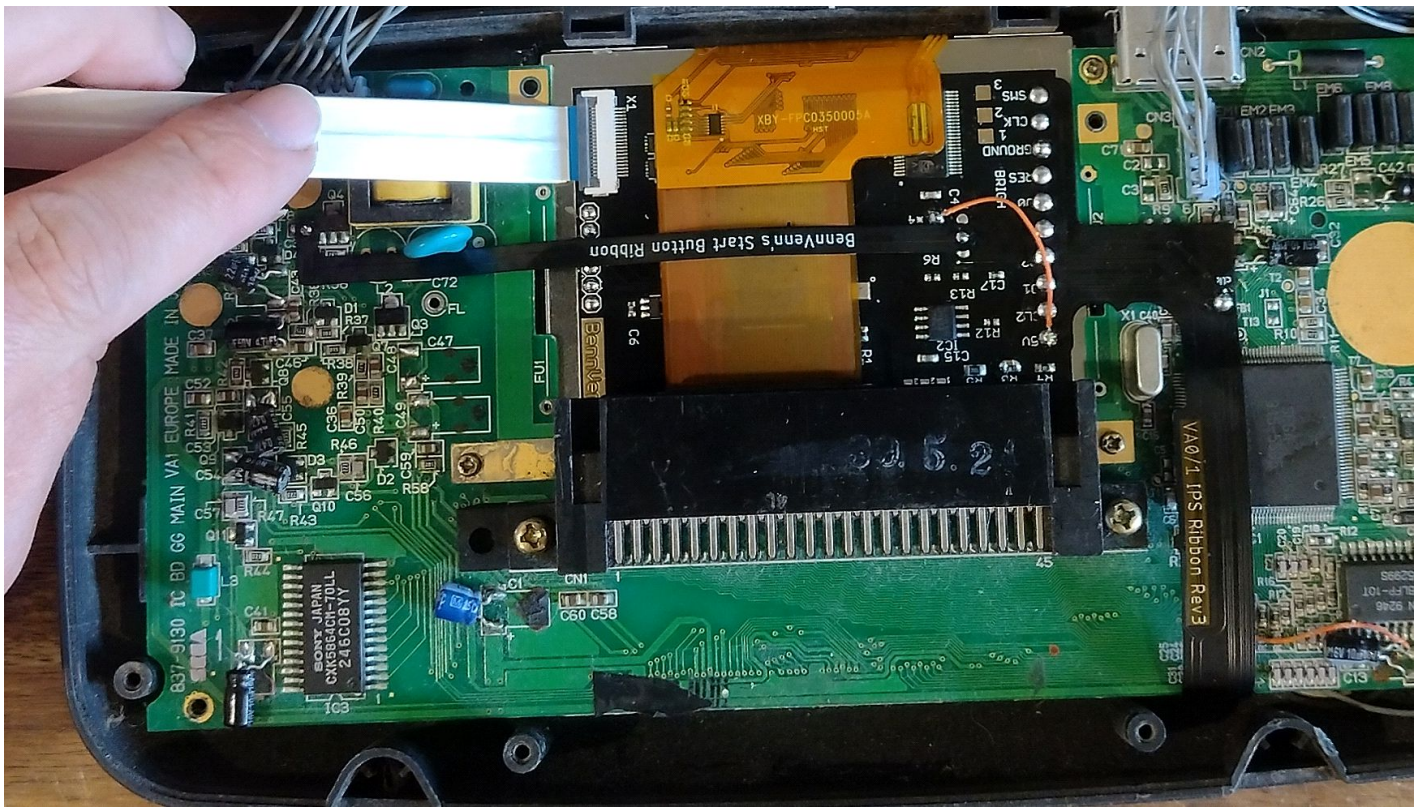
If you wish to install the touch module, bridge pads '**B**' on the touch module. This makes the output latching (one touch on, one touch off). With **B** open, the output will only be active while you are touching the pad. Note the colors I've chosen for Gnd, I/O and VCC. Colors are not important though this will help show where they solder to the PCB.



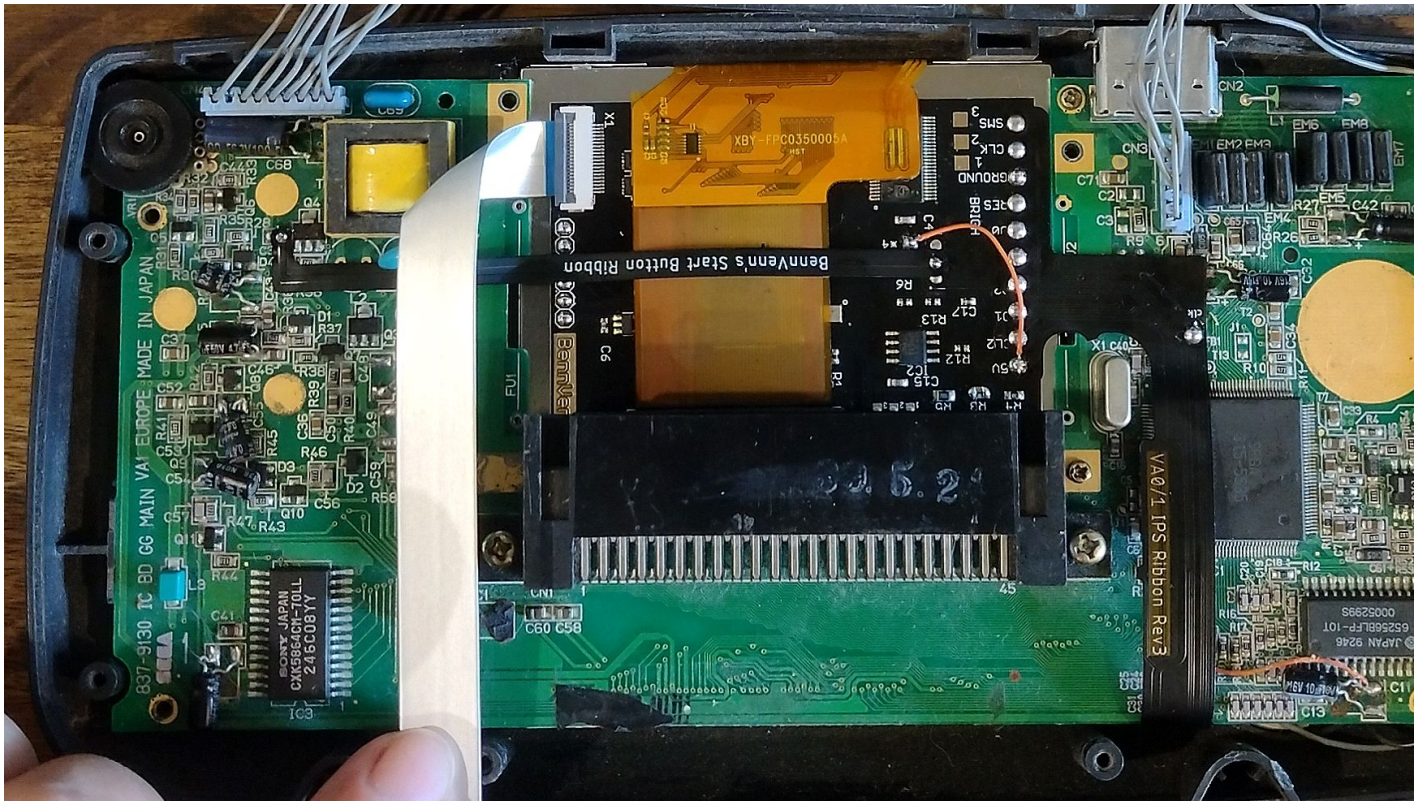
See above for solder locations for the touch module.



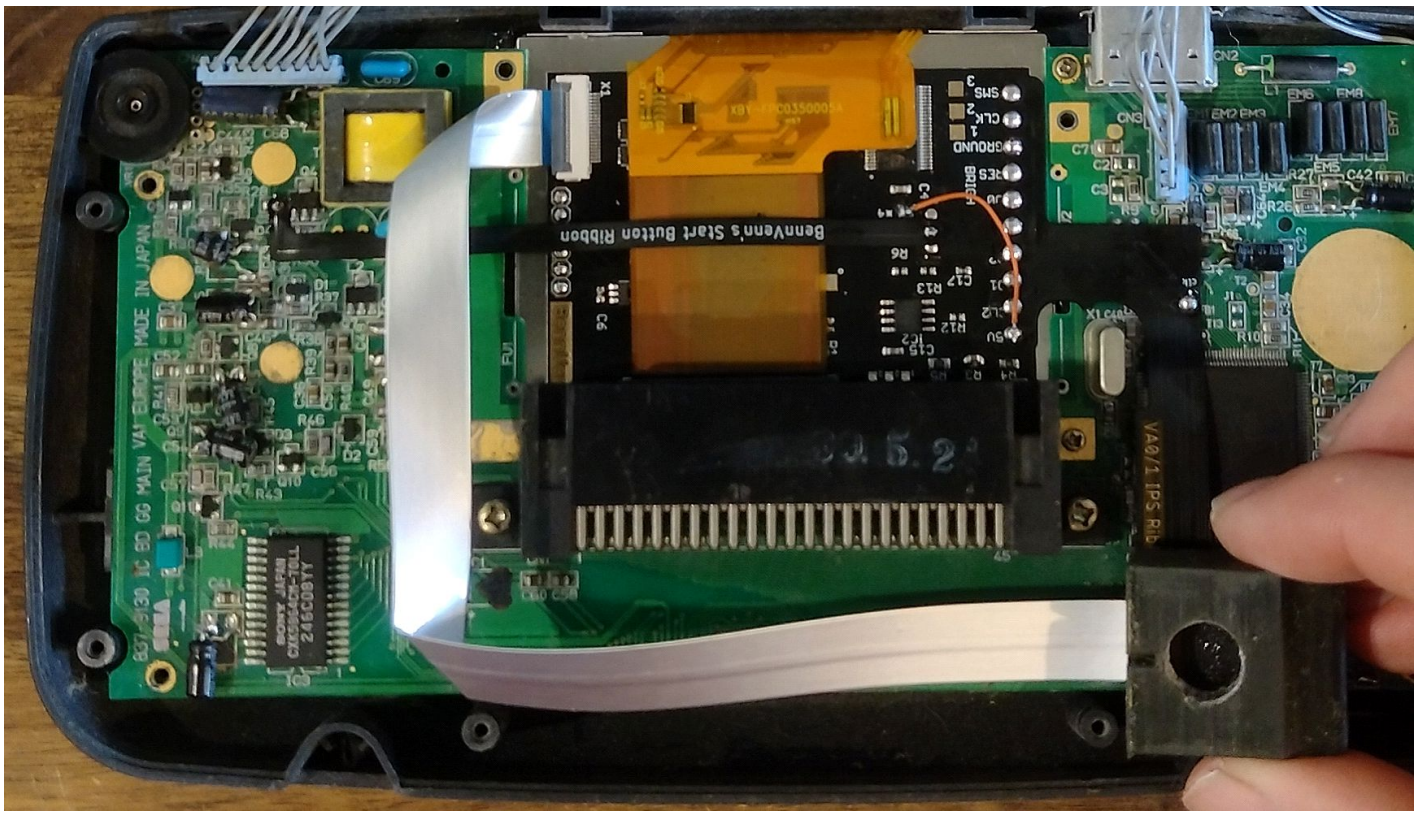
Lift the small gate (carefully!) of the video connector and insert the shielded ribbon cable, blue side up into the socket.



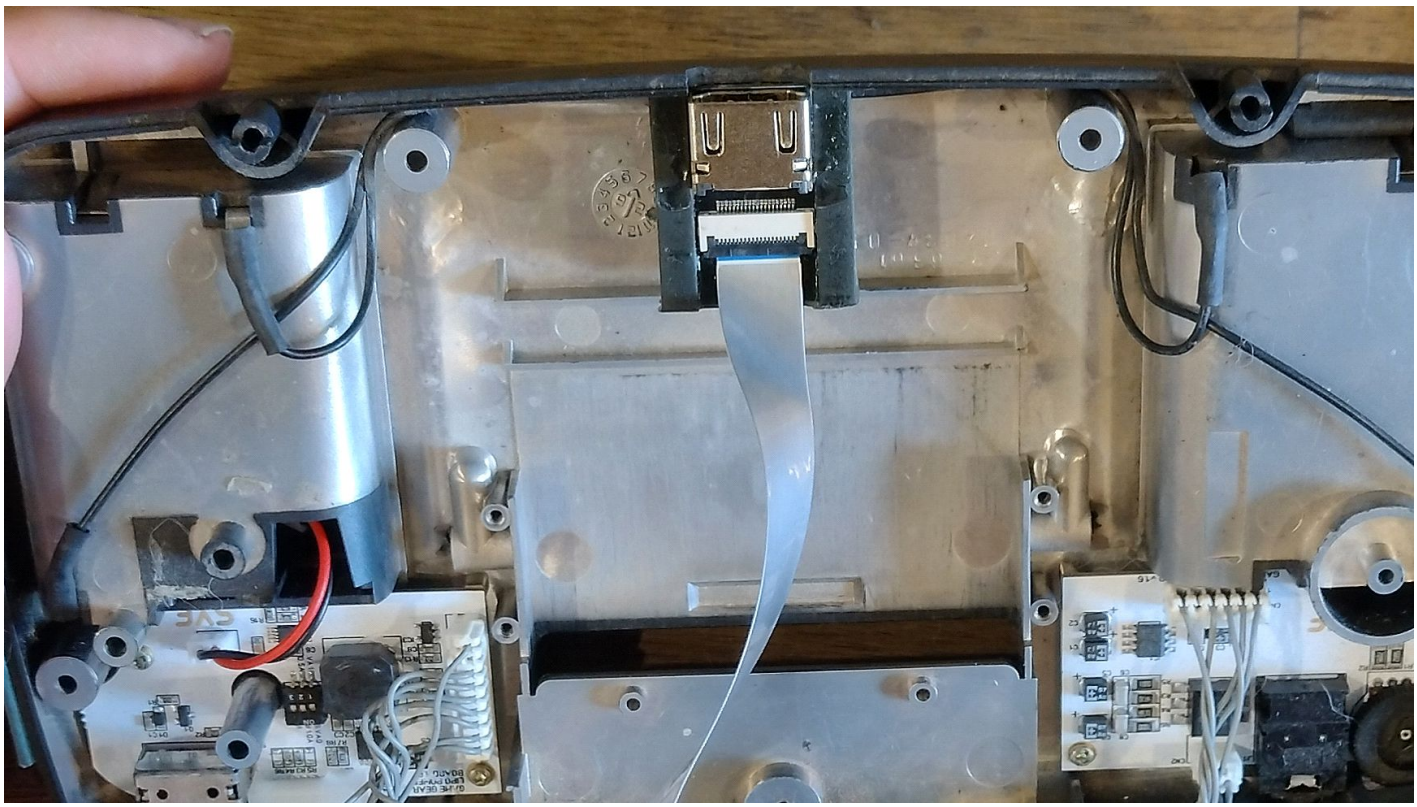
Once inserted, lock the small gate.



Make a 90deg fold and crease.



Make a second 90deg fold and crease.



After cutting a suitably sized slot in the lower case, install the resin printed mount to the large screw post and push down firmly.

Congratulations! you've finished your IPS install! If anything went wrong, our email is support@bennvenn.com though we suggest using our discord as nearly all questions have been asked and answered.