
Nomad Triple Bypass Installation v1.6

Before We Begin:

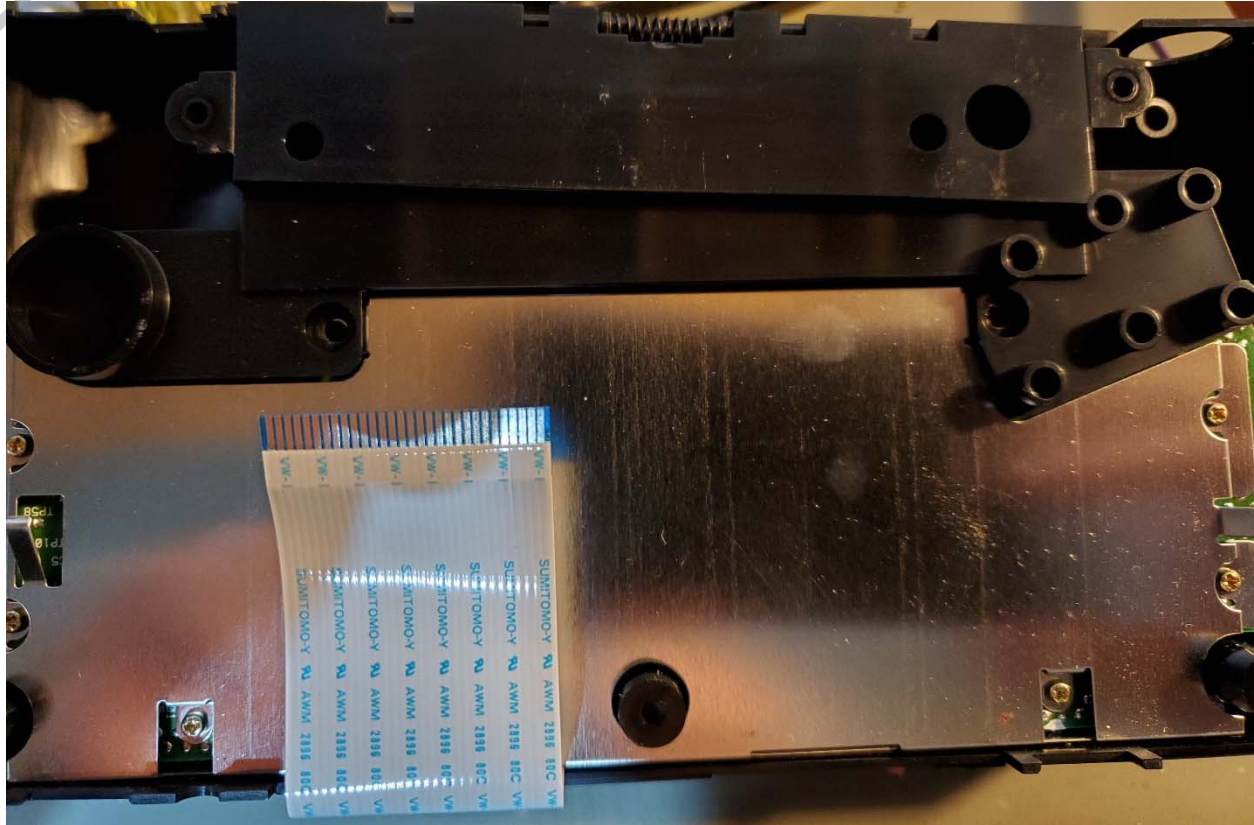
Disclaimers

This document covers the DIY installation of the Nomad Triple Bypass kit. Mobius Strip Technologies or any of its associates cannot be held responsible for any damage that occurs from the improper installation of this device. It is expected that the person performing this installation has the necessary tools and knowledge to safely do so. If you are not comfortable with soldering, desoldering, hot air rework tools, electrical circuits, discharging capacitors, using basic hand tools, or working with electronic devices with high ElectroStatic Discharge sensitivity, please stop now and consult a qualified technician. You have been warned.

Expectations

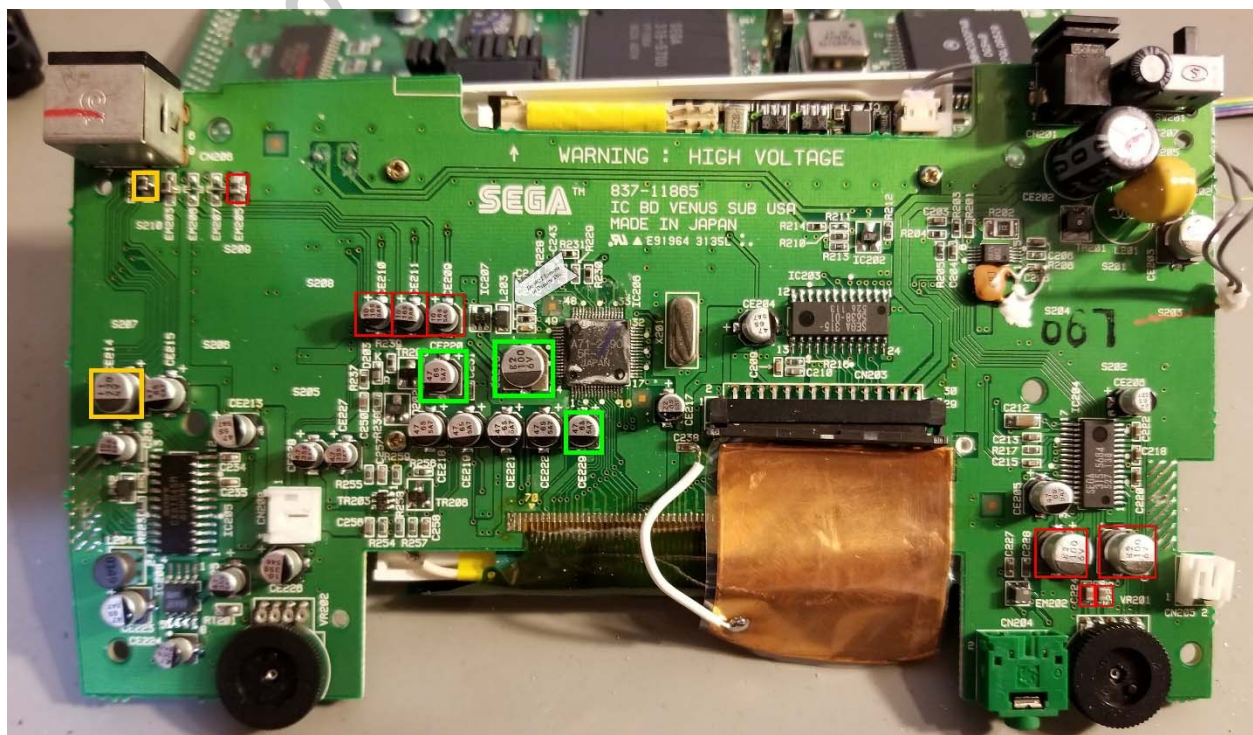
With the Nomad Triple Bypass kit output is expected to be as good as or better than the current video and audio output you currently see from your console. Hundreds of hours of testing with various systems, cables, and power supplies were performed. That being said, there is always the possibility of additional variables that could not be tested. If you encounter any issues, you should always recheck your work before assuming an issue with the kit.

1. It is expected that you already know how to completely disassemble your Sega Nomad.
2. With your Nomad completely disassembled, remove the Main and Sub boards to begin component removal. Set the OEM cart slot assembly, top side RF shield, and the FFC for the main board to the side. They will not be reinstalled.

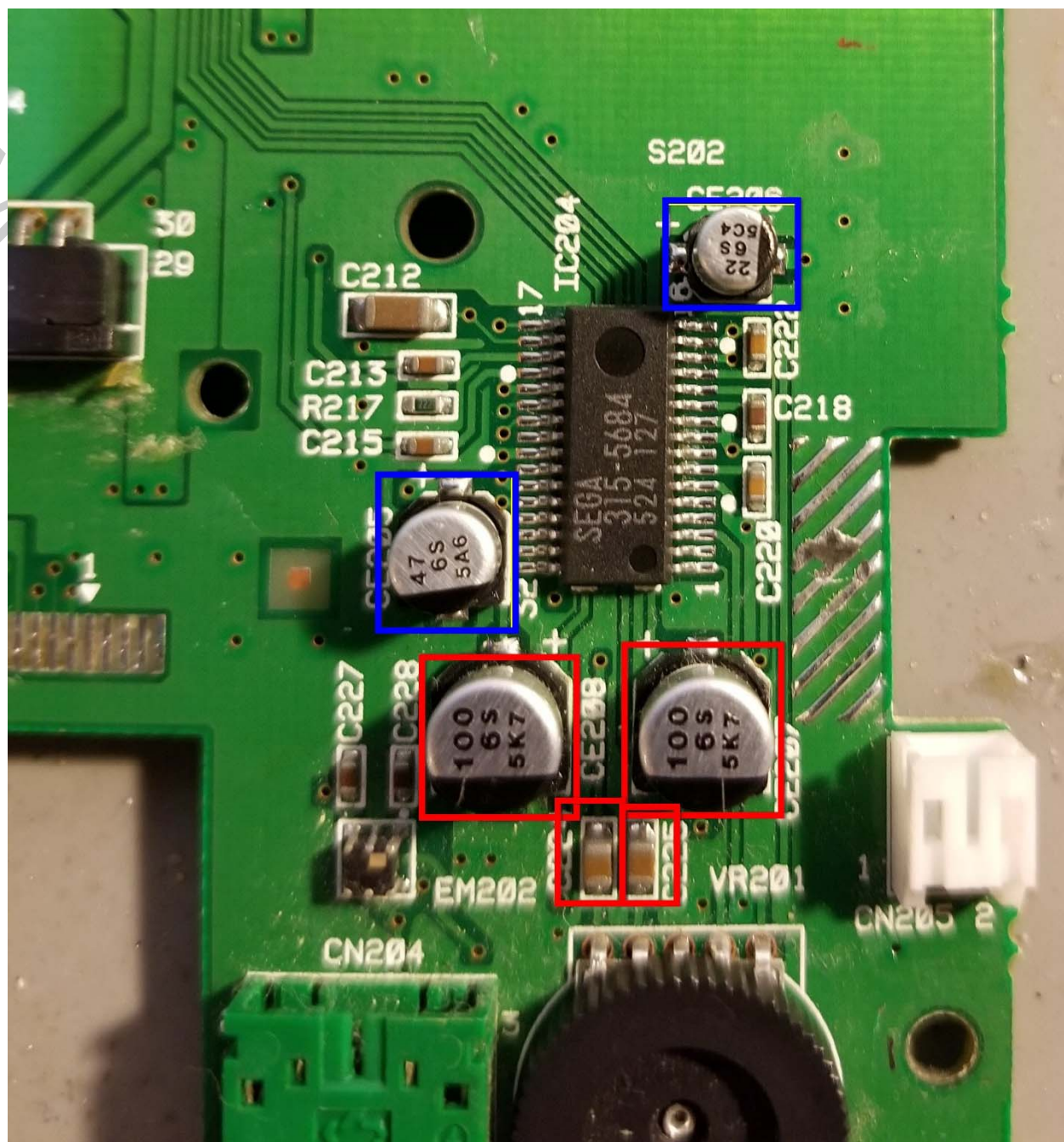


- Take special care not to damage or remove L203 near the 3 side by side capacitors that must be removed.

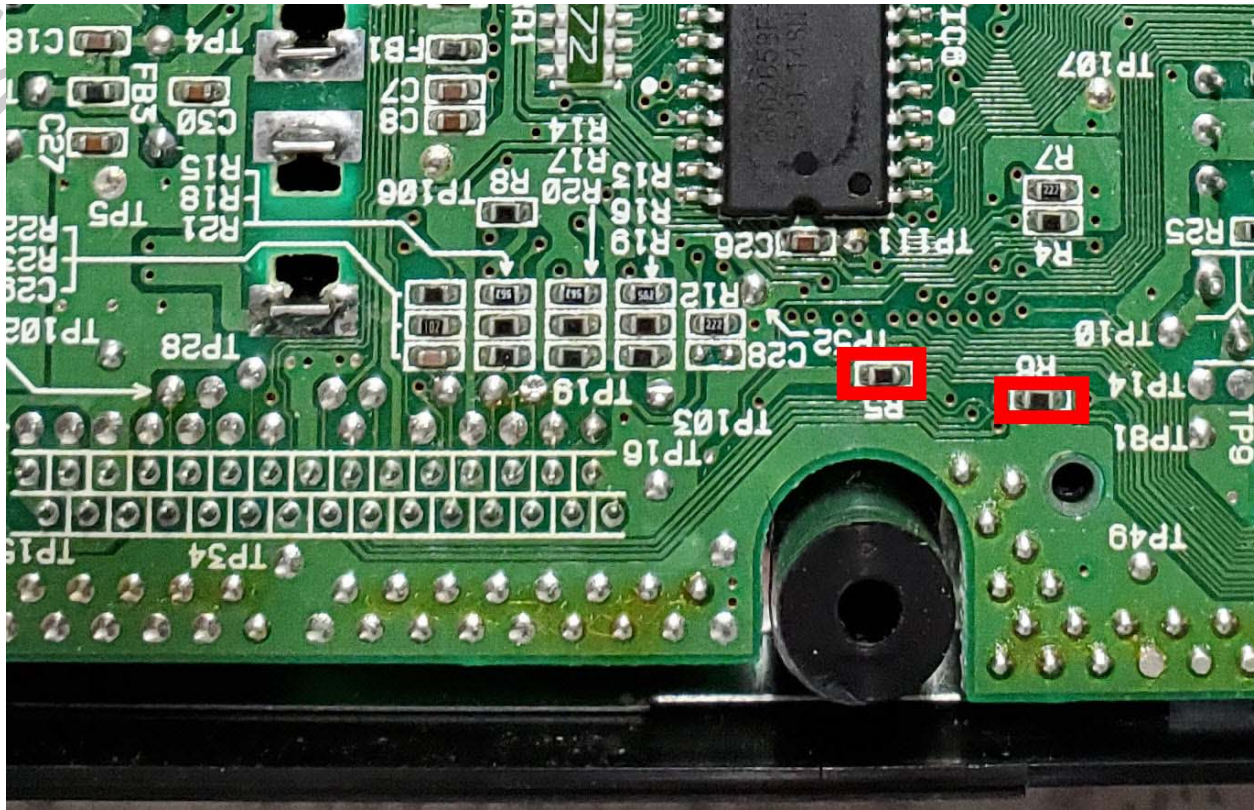
- Components in yellow should be removed if disabling composite video output.
- Components in blue in the second picture can be optionally removed to completely disable the OEM audio amp. As it is no longer used. Removing these may have a minor positive effect on power draw and noise floor, but it would be minimal. You can also optionally remove the Sega 315-5684 altogether, but there is little value in doing so.



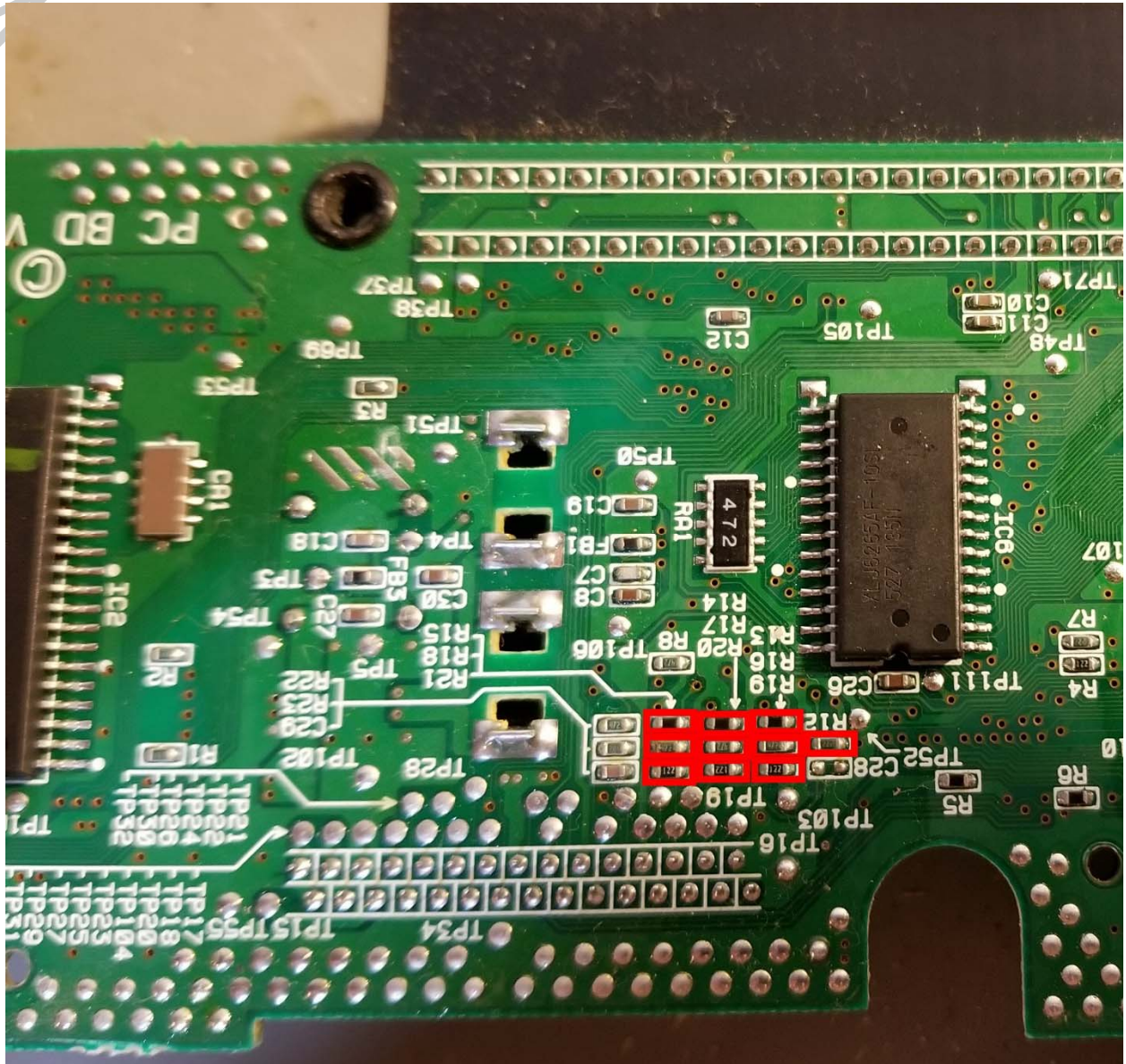
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5. Remove both R5 and R6 from the Nomad Main board. Bridge the pads of R5 and R6.
- You can use a small piece of wire or a component leg to assist with bridging the pads.

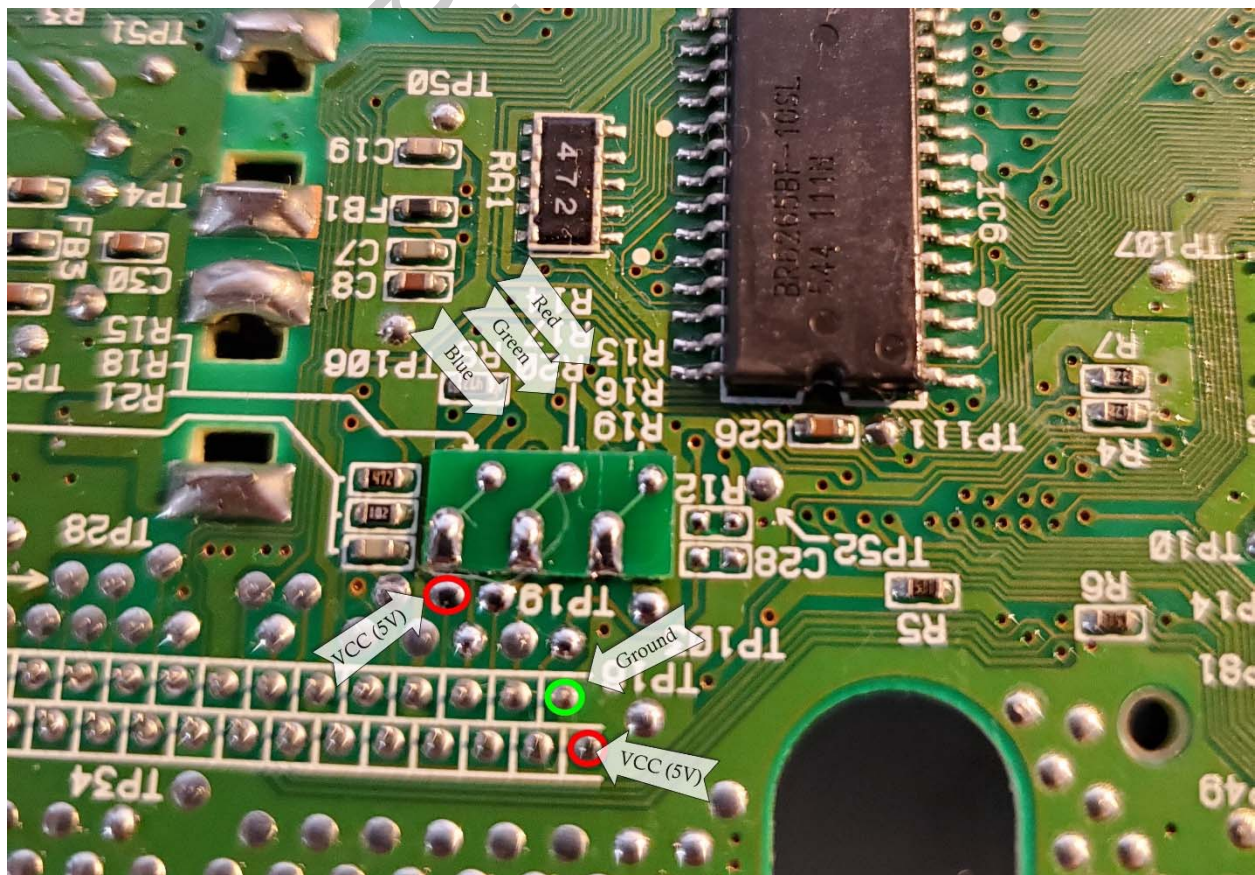
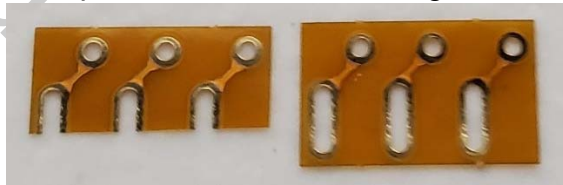


Optional 6. If you intend on enabling the Video Bypass, remove all components in red below.

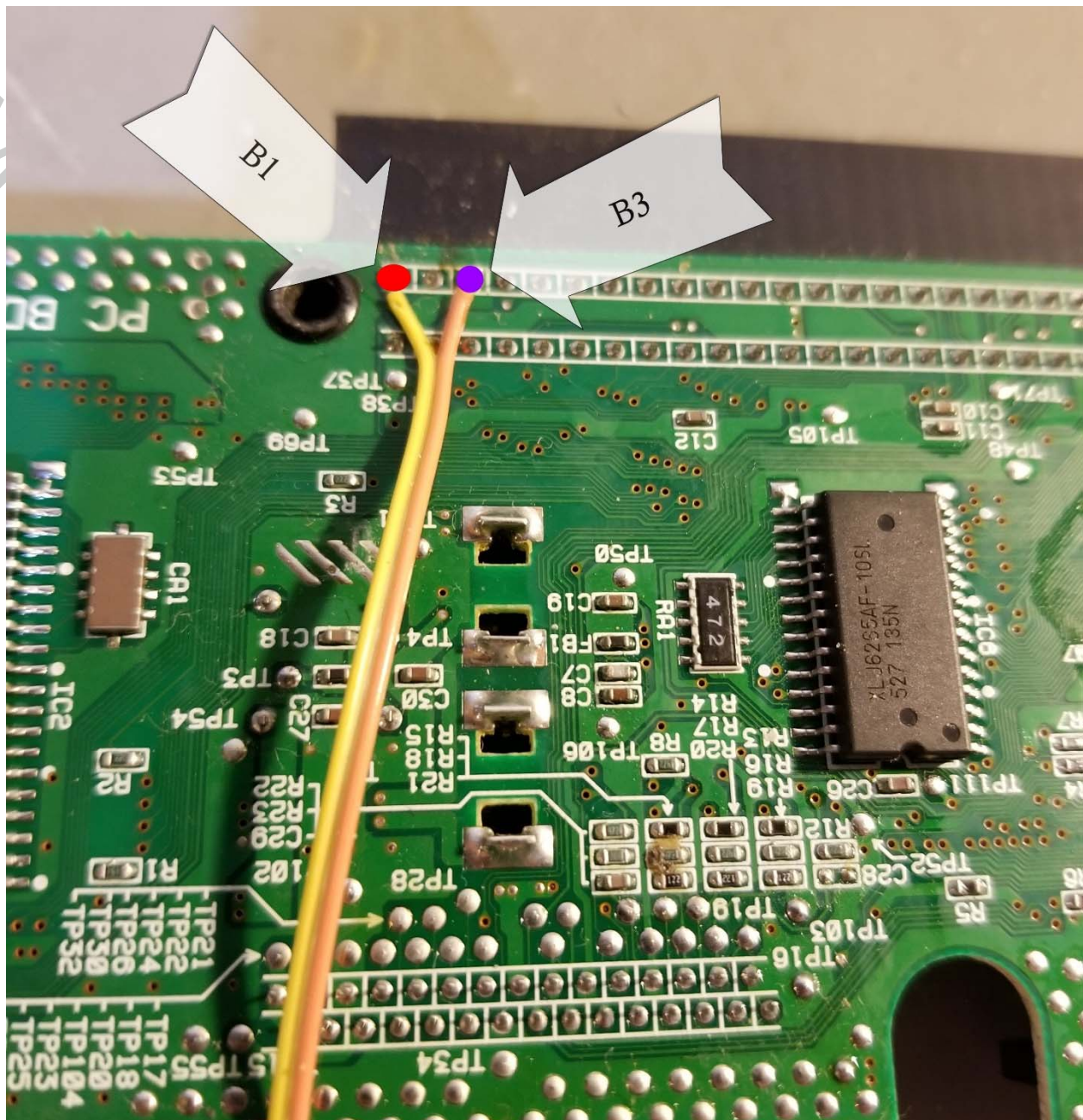


Optional 7. After removing the components from the Main board. Position the Video Bypass QSB as shown and solder in place. Ensure there are no connections to additional points on the board.

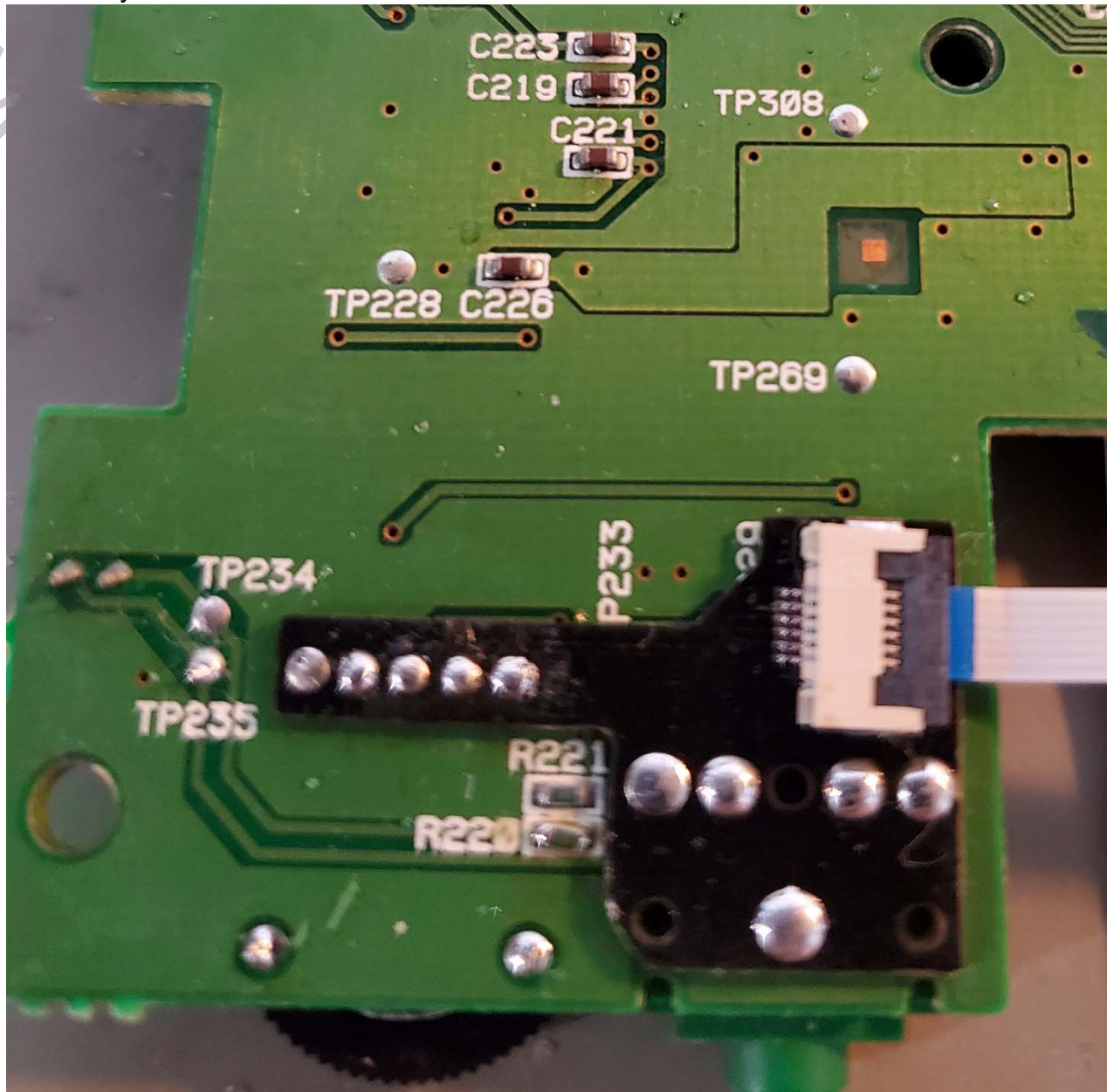
- You should take the time to verify with a multimeter that there is no continuity from any of the solder joints to VCC or Ground. Pay special attention to the VCC point directly below the blue connections.
- As of February 7, 2020 all kits are shipped with the Video Bypass QSB pre-cut to minimize potential damage. If your kit was shipped before this, consider cutting the lower portion of the flex PCB to prevent accidental connection to other points on the board. Left is after cutting bottom. Right is the original size.

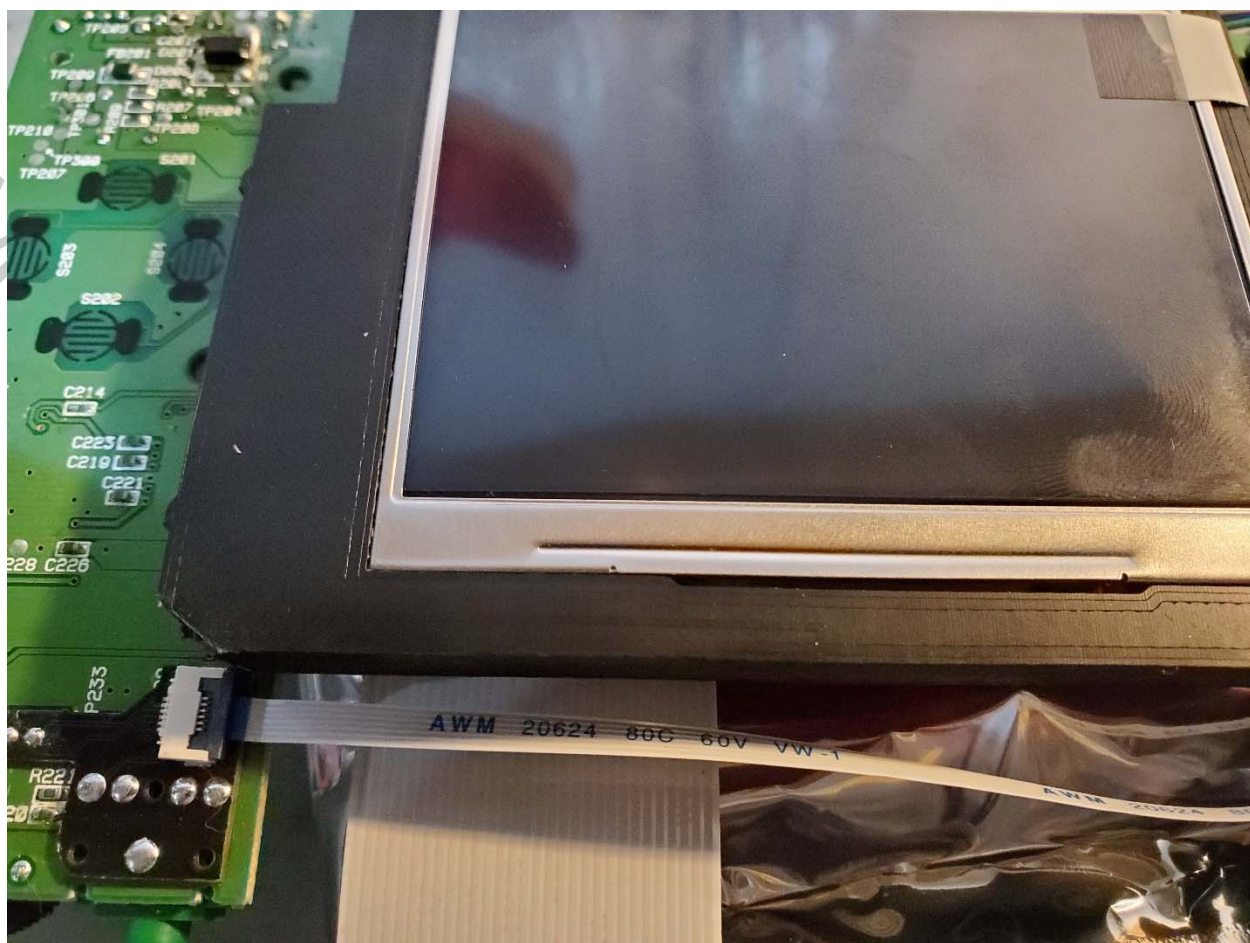


8. Connect the B1 and B3 audio lines to these solder points for the cart slot.



9. On the front side of the Sub board, install the Headphone adapter as shown. Depending on the screen in use and the spacing of the headphone FFC, it may be necessary to cut the corner of the screen bracket as shown.

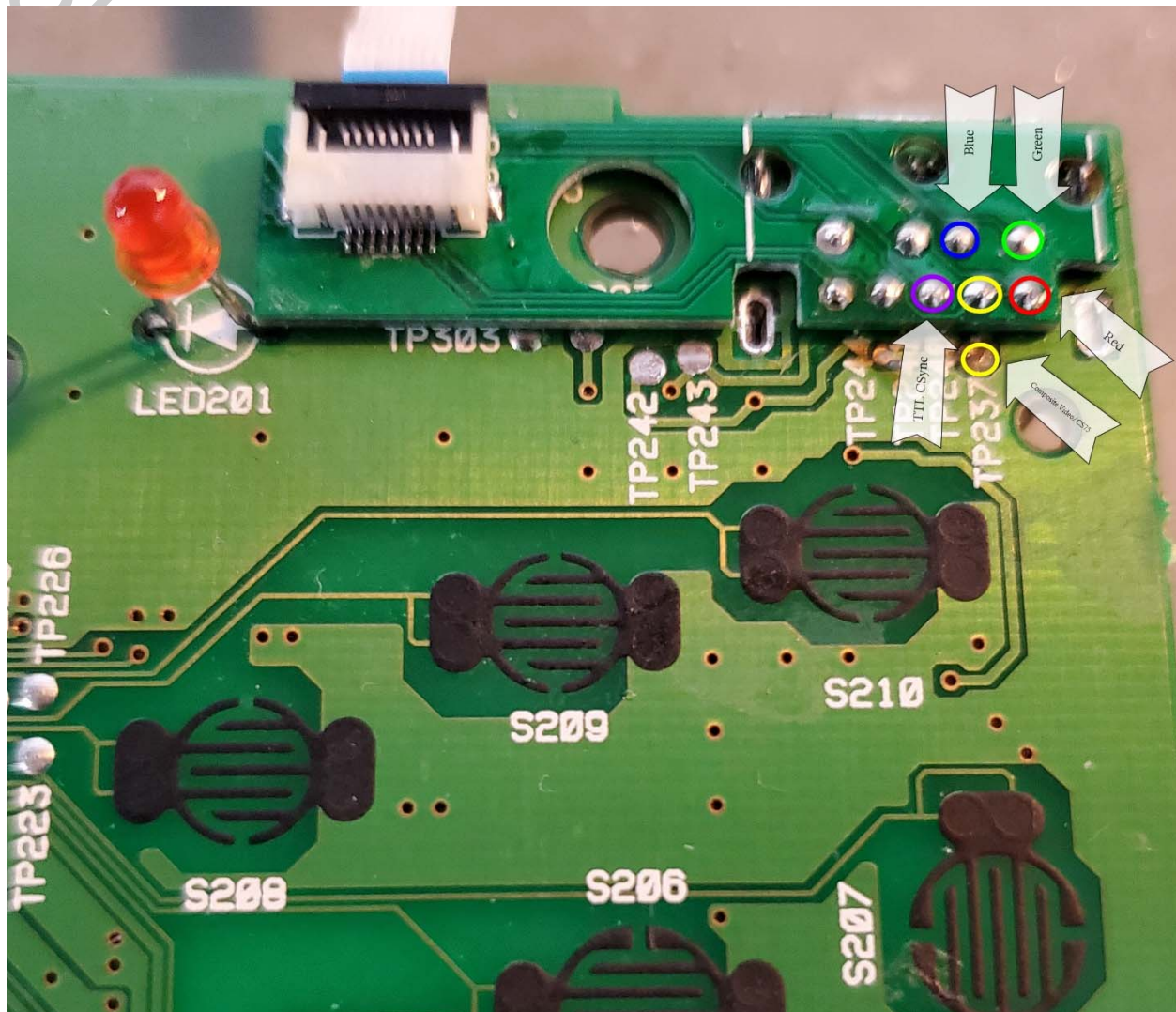




Optional 10. If you have chosen to perform the Video Bypass, install the AV-Out Board to the miniDIN as shown. The board should be as flat as possible. You may need to trim the ground pins on the MiniDIN. If you are going to be installing an aftermarket LCD screen, the pins have been labeled for your convenience.

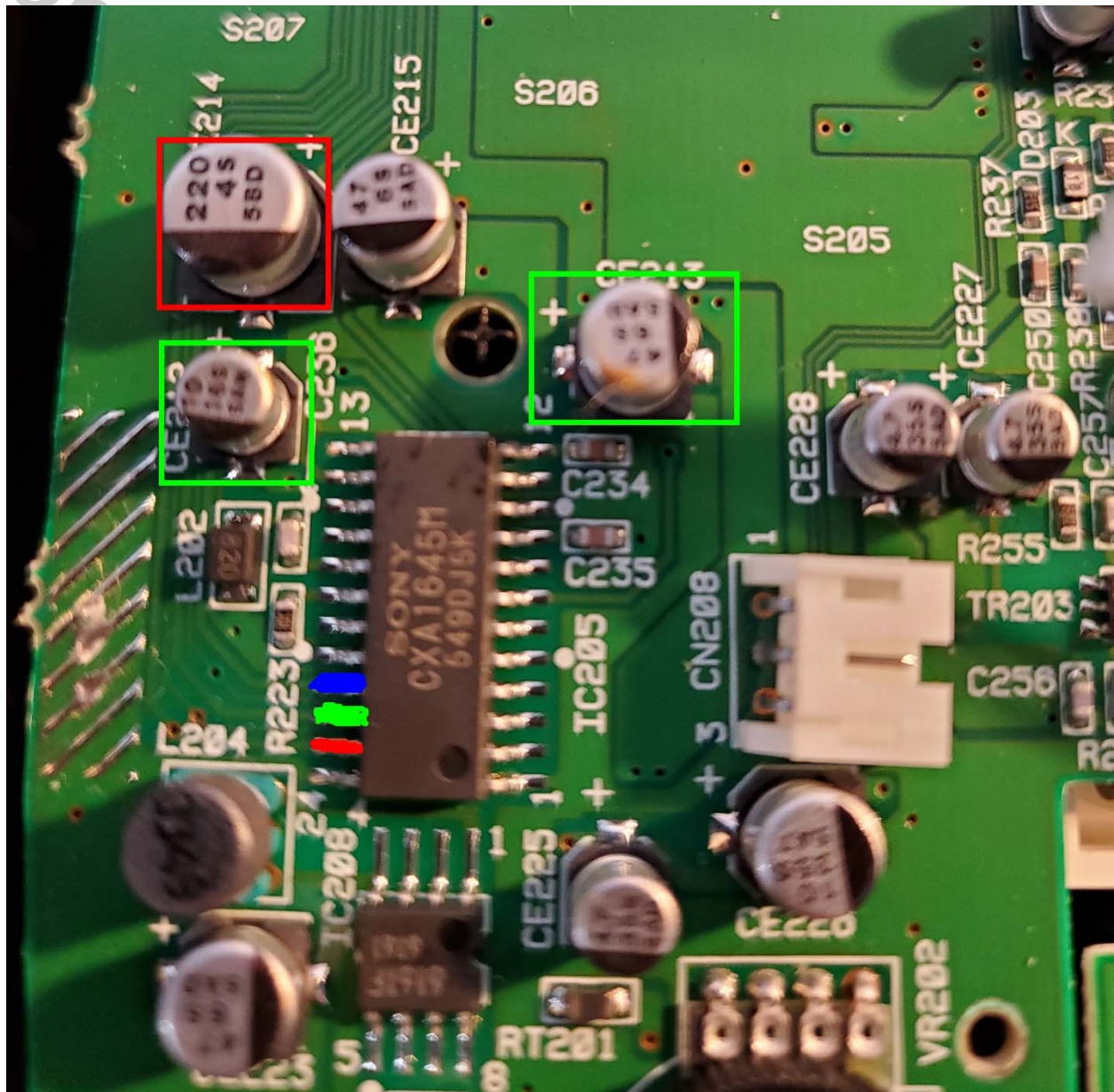
Purple – TTL CSync

Yellow – Composite Video or CSync 75ohm



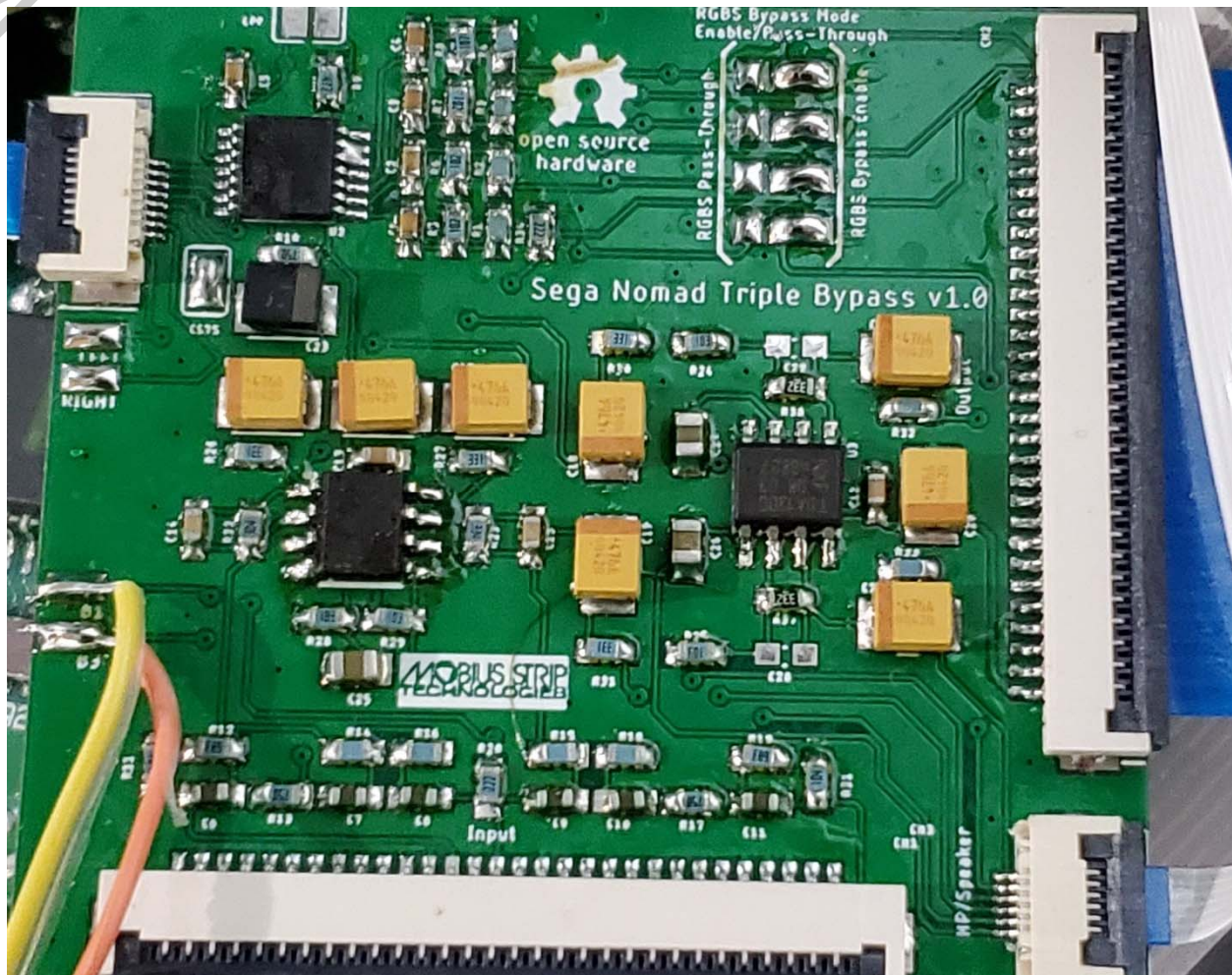
Optional 11. If you have chosen to perform the Video Bypass, lift the RGB pins from the CXA1645M encoder.

Optional 12. If you are also planning to remove Composite Video in favor of 75ohm CSync. Remove the 220uf capacitor in the red box to sever the composite video signal. You may optionally remove the capacitors in green as well. This will disable the CXA1645 encoder as it is no longer needed. You can also optionally remove the CXA1645 entirely. However there is little to no benefit to doing this.



13. Set the jumpers on the Nomad Triple Bypass board to the right for Video Bypass enabled or to the left for Video Passthrough mode. If you are disconnecting Composite Video in favor of 75ohm CSync, set this jumper as well.

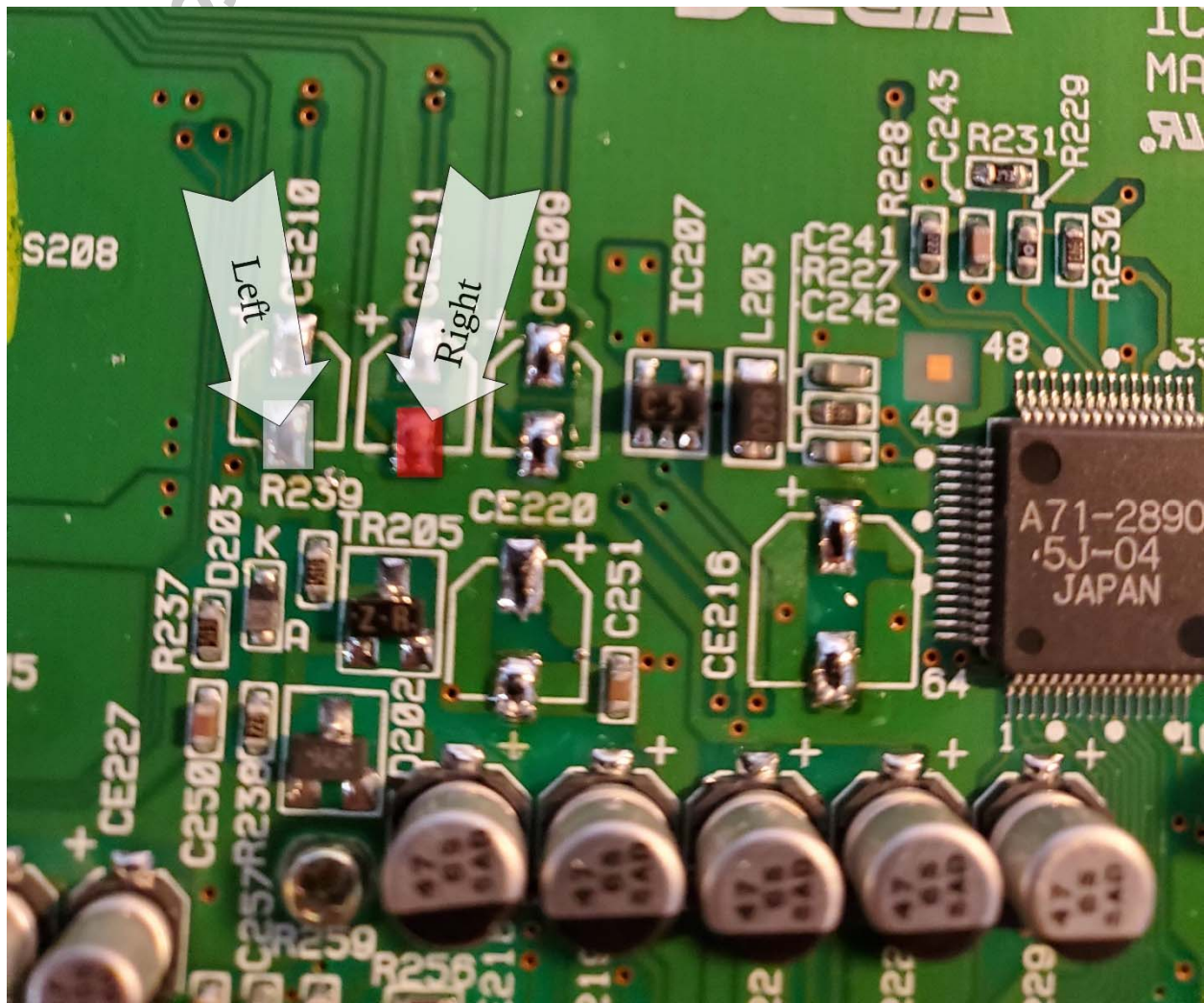
Do not enable Video Bypass mode if you did not remove the components from the Main board.



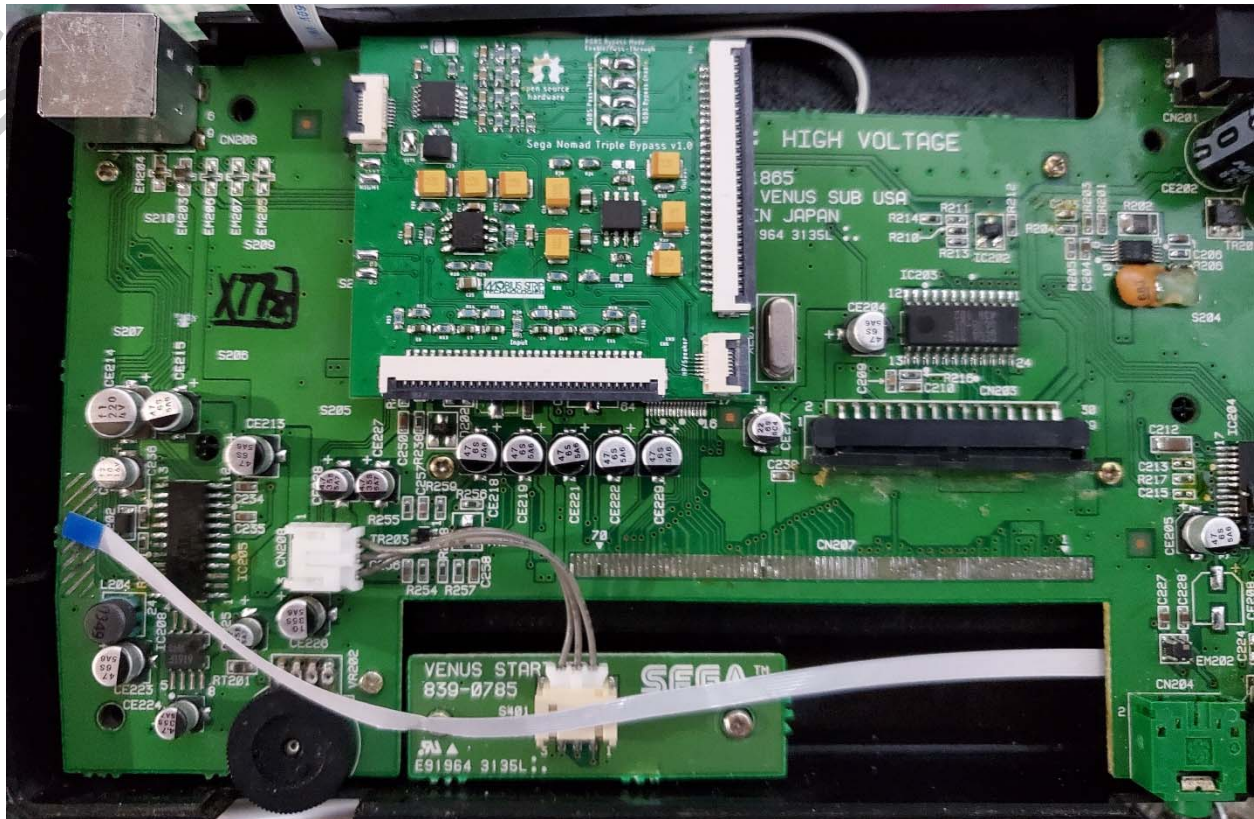
14. Now plug in all of the FFC cables to the QSBs, Main board, and Sub board. Blue plastic is always facing up for each connection.

- 8pin FFC goes to the AV Out QSB.
- 6pin FFC goes to the Headphone QSB.
- 30pin FFCs plug in to the factory FFC connectors.

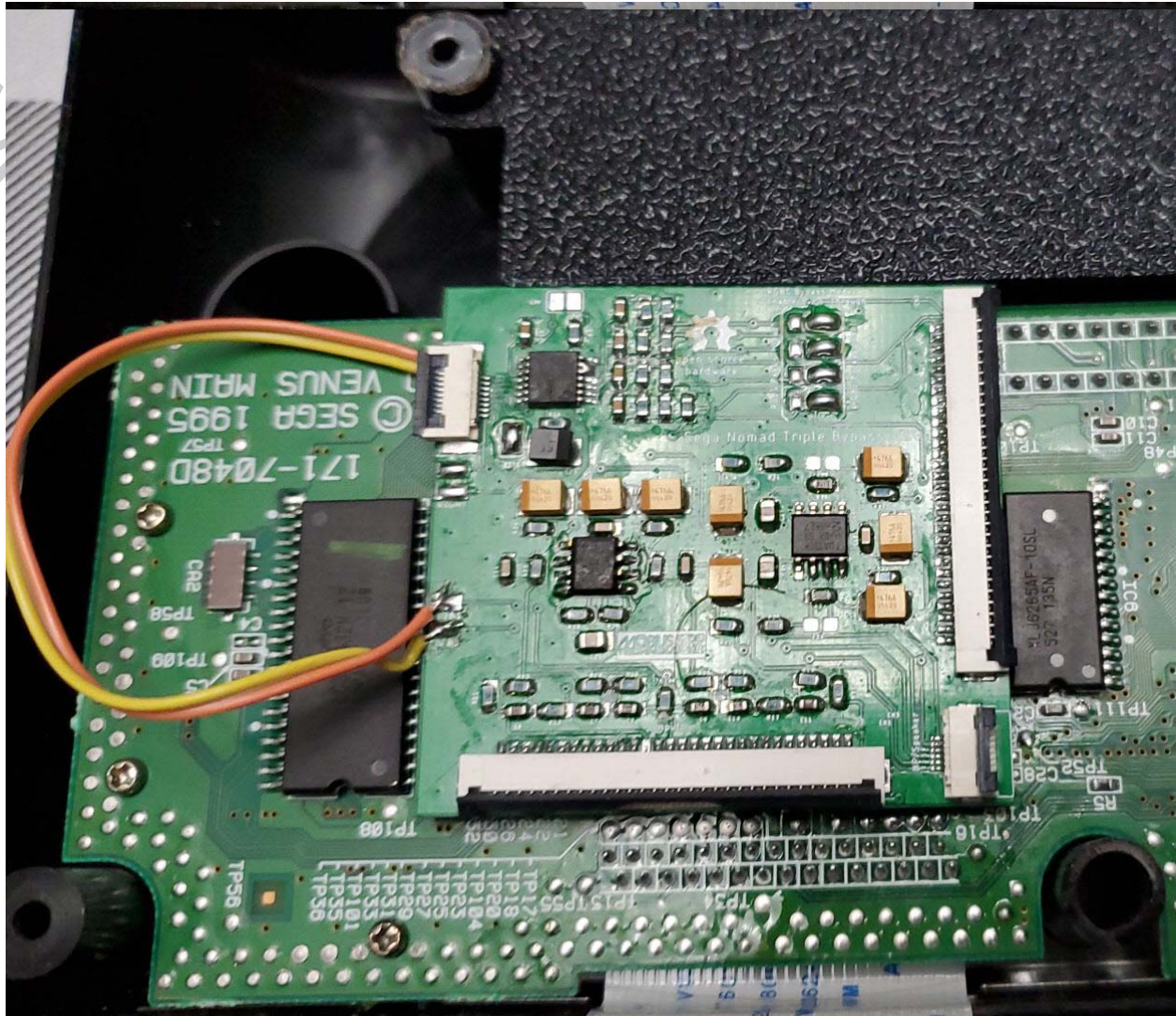
Optional 15. If you did not perform the video bypass, you will need to connect the audio lines without the AV Out QSB. To do so, connect 2 wires to the left and right pads on the Triple Bypass. These are located directly below the 8pin FFC connector. Then connect the wires to the corresponding locations on the Sub board.



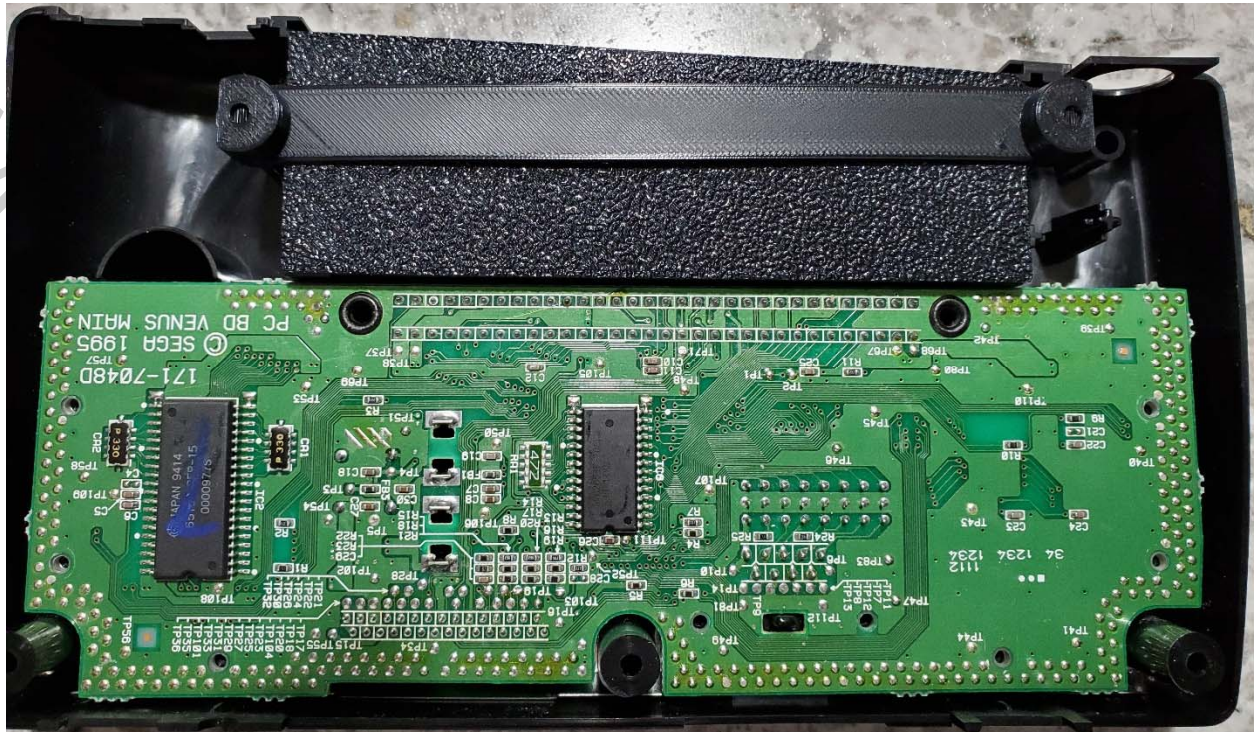
16. Now that all the connections are made. It's time to reinstall the Sub and Main boards. As well as position the board. If you removed the stock screen, place the board as shown on the Sub board.



Optional 17. If you did not remove the stock screen, position the board in this location on the Main board.



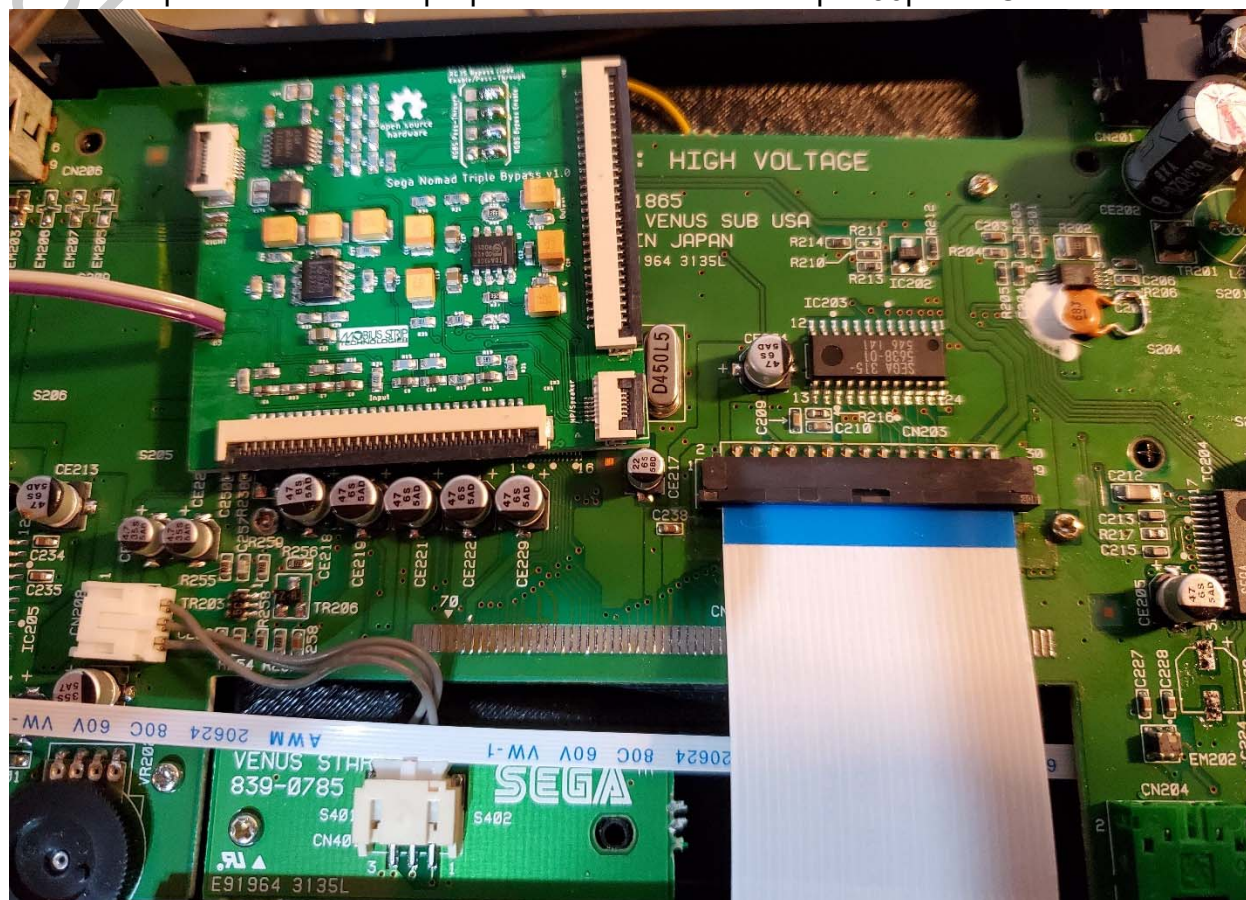
18. Install the replacement cart slot and brace.

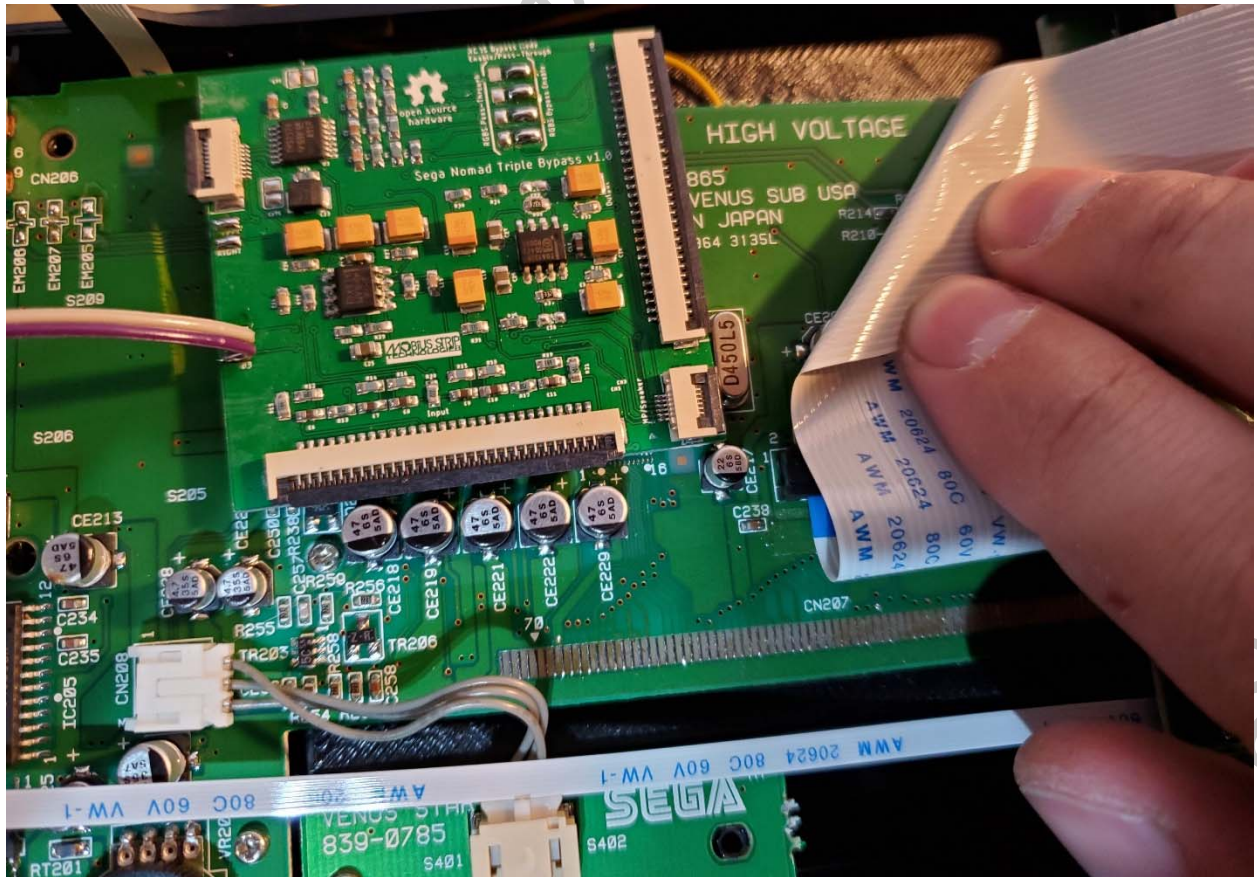
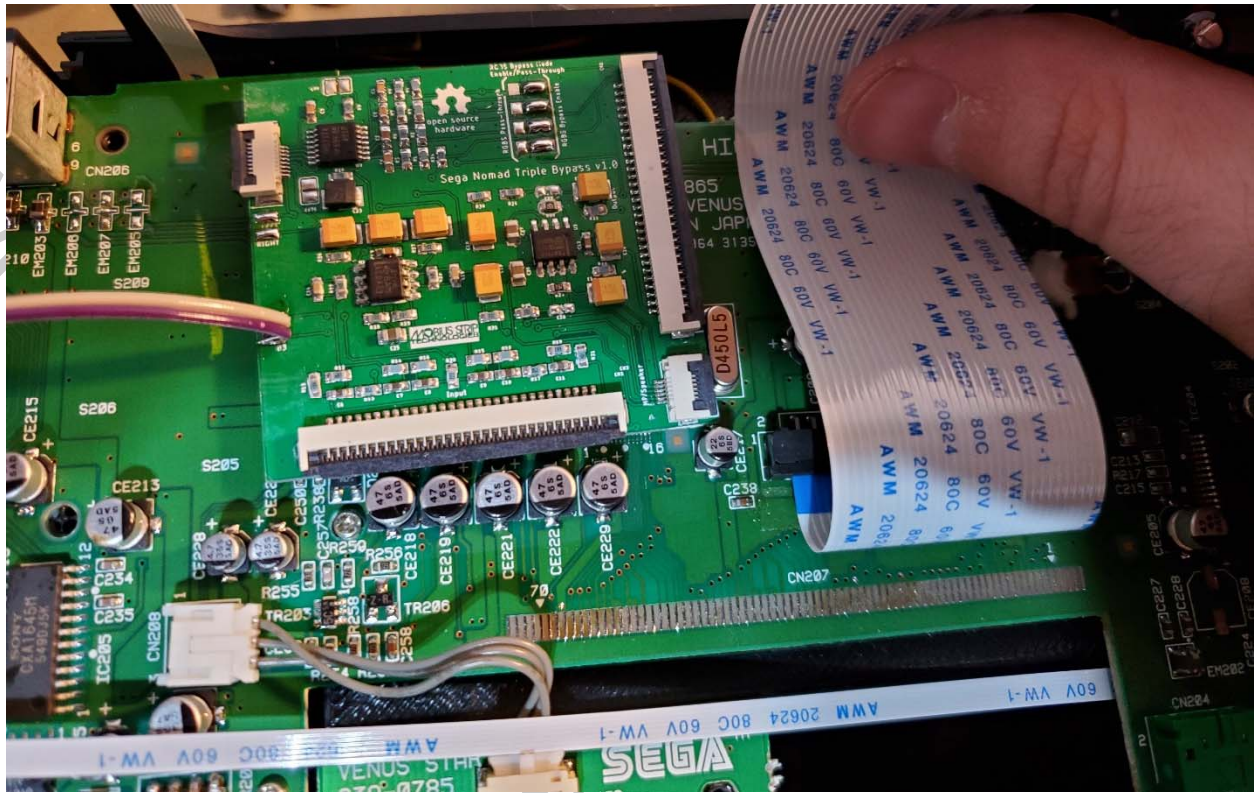


19. Connect B1 and B3 wires to the Triple Bypass board pads as labeled.

20. Connect the FFCs to the Triple Bypass board. Use Kapton tape if necessary, to keep the FFCs away from any screw holes or pinch points. Use caution when folding the 30pin FFC connections.

Follow the pictures below for proper orientation of the output 30pin FFC.







21. The Input 30pin FFC has no special requirements for installation. Just be certain that you did not cover any screw holes or pinch points on reassembly.

22. Reassemble the outer case and enjoy.

Below are examples from our friend Jose Cruz of a well laid out full install. See these examples for ideas on managing the cables and wires for your install.

